DOCUMENT RESUME

ED 096 405 CE 002 003

TITLE	Report to the Government of the Democratic Republic of the Sudan on Industrial Vocational Training Needs.
INSTITUTION	International Labour Office, Geneva (Switzerland).
REPORT NO	ILO-TAP-Sudan-R.15
PUB DATE	73
NOTE	112p.
EDRS PRICE	MF-$0.75 HC-$5.40 PLUS POSTAGE
DESCRIPTORS	*Educational Assessment; Educational Coordination; Educational Needs; Employment Opportunities; *Engineering; Improvement; Job Training; Manpower Development; *National Surveys; Questionnaires; Semiskilled Workers; Skill Development; *Statistical Surveys; Trade and Industrial Education; Vocational Counseling; *Vocational Education; *Vocational Retraining
IDENTIFIERS	Engineering Industry; *Sudan

ABSTRACT

This detailed, 2-year study used skill surveys to determine the Sudan's existing and developing needs for vocational training in various trades (at various levels, including retraining and upgrading). Two other objectives were to ascertain the educational and skill levels for different occupations, in particular in the engineering industry to assess training needs, and to evaluate existing and planned vocational training in relation to training needs. Recommendations treat areas of coordination of vocational training programs, upgrading of training, training of new employees, in-plant training and apprenticeship, instructor training, higher technical secondary schools, national vocational training institutions, departmental vocational training institutions, expansion of vocational training facilities, vocational guidance and employment opportunities, and finance. More than two-thirds of the booklet is devoted to appendixes such as survey tools, graphs, statistical tables giving classifications and distributions of establishments, current and future vacancies by occupation and province, establishments providing new worker training, and descriptions and comments on various vocational training institutions. (NH)

CONFIDENTIAL

ILO/TAP/Sudan/R.15

INTERNATIONAL LABOUR OFFICE

United Nations Development Programme
Technical Assistance Sector

REPORT

to

THE GOVERNMENT OF THE DEMOCRATIC REPUBLIC OF THE SUDAN

on

INDUSTRIAL VOCATIONAL TRAINING NEEDS

GENEVA
1973

TABLE OF CONTENTS

I. INTRODUCTION

1. In order to ensure that vocational training in the country would be based on the needs of industry, the Government of the Democratic Republic of the Sudan requested the assistance of the United Nations Development Programme (UNDP) in determining those needs, especially in the metal, automotive, electrical and printing trades. On behalf of the UNDP, the Director-General of the International Labour Organisation (ILO) appointed vocational training expert Mr. T.R. Buxton of New Zealand to conduct the necessary skill surveys, and so enable vocational training centres and other facilities and programmes to be planned and co-ordinated on a national scale. This work was to be co-ordinated with and complement the activities of the National Vocational Training Scheme (SUD 21) project then being assisted by the UNDP Special Fund, with the Ministry of Labour (later Ministry of Public Service and Administrative Reform) as governmental co-operating agency.

2. Mr. Buxton arrived in the Sudan in July 1970 and left two years later in June 1972. His specific terms of reference were to advise and assist the above-mentioned Ministry in:

- conducting skill surveys in order to determine the existing and developing needs for vocational training in various trades[1] and at various levels, including retraining and upgrading training of workers,
- ascertaining the educational and skill levels required for different occupations[1], in particular in the engineering industry, with a view to assessing training needs;
- examining the existing and planned vocational training facilities and programmes with a view to evaluating them in relation to training needs.

In addition, he was called upon to carry out, as necessary, any other relevant duties within his competence as a vocational training expert.

3. The Director-General of the ILO wishes to express his appreciation of the valuable co-operation and support afforded to Mr. Buxton by the Ministers and other officials concerned, the principals and staff of the many industrial establishments visited, and employers' and workers' organisations involved in the survey.

---

[1] A list of those covered is included in Annex IV.

II. TECHNICAL BACKGROUND

Demography

4. The Sudan, with an area of approximately 1 million square miles (2.6 million square kilometres) is the largest country in Africa, but with six persons per square kilometre it has one of the lowest densities of population. The population is currently estimated to be slightly over 16 million, based on a projection of the figure established during a revision of the 1956 census, undertaken with UNDP assistance in 1960.

5. The high proportion of young people in the population is of great significance in considering the human resources of the Republic in relation to the available work force. Of the estimated total population mentioned above, no less than 9 million are now under 20 years of age, a more precise ratio of 57.2 per cent - one of the highest in the world - being mentioned in the Year Book of Labour Statistics for 1965. A further indication of the increasing number of employable persons can be gained from Annex I, which shows projections of the male population between 5 and 19 years old over the period 1966 to 1975. The males in the important upper group of 15 to 19 year olds rise in number from 728,000 to 1,053,000 during this ten-year period.

Labour force

6. The labour force in 1971, as projected from the 1956 census, numbered 7,383,000, after increasing at an average annual rate of 181,000 over the previous ten years; this increase has resulted in the exertion of a corresponding increase in pressure on the employment creation capacity of the country. The same census revealed that out of the total labour force of 4,844,000 as it then stood, 241,200 - or close on 5 per cent - were engaged in manufacturing, while over 85 per cent were engaged in agriculture, livestock production, forestry and fishing. Although some increase in manufacture has undoubtedly taken place since then, the latter occupations remain dominant.

7. The spread of the labour force is indicated by the sectoral manpower requirements tabled below; these were extracted from a paper[1] in which the figures were based on those given in the Republic's five-year plan covering 1971-75.

---

[1] Presented at a UNESCO seminar on diversification of secondary education, Khartoum, from 27 March to 15 April 1971.

Sectoral manpower requirements (in thousands) 1971-75

Sector	Increase	Replacements	Total
Agriculture	460	257	717
Manufacturing	55	6	61
Construction	12	2	14
Commerce	20	3	23
Transport	24	3	27
Public service	67	7	74
Private service	27	7	34
TOTAL	665	285	950

Industrial expansion

8. The research department of the Bank of the Sudan reported in October 1970 that what it termed modern (as against traditional) manufacturing had developed at a high rate since independence[1] and shown remarkable dynamism. As a proportion of total manufacturing, it had risen sharply and constantly from 22 per cent in 1955-56 to 58.7 per cent in 1968, thus showing a most substantial shift to industrialisation. In this context, it is also important to note the statement that the contribution to the gross domestic product of manufacturing as a whole rose from 4.4 per cent in 1955-56 to 7.0 per cent in 1960.

9. It is against the foregoing development of industry in the Sudan that the need for vocational training should be viewed. With an estimated annual increase of over 180,000 in the total labour force, together with an accelerating rate of increase in the expansion of the industrial sector, the need for more skilled workers, foremen and technicians is obvious. Available governmental statistics indicate that at least 5,000 trained workers per year will be needed to meet demands arising from the industrial expansion programme, to which the Government has given much attention over the past ten years. According to the UNDP recommendation concerning provision of assistance to the National Vocational Training Scheme (SUD 21), the development plan for 1961-71 called for an investment of about US$580 million with the aim of tripling industrial output.

---

[1] Presumably in 1956, on termination of the Anglo-Egyptian Condominium.

Literacy

10. While the Republic must rely on vocational training to meet the demand for skilled industrial workers, such training can only be effective if the entrants are sufficiently literate to absorb the instruction given, and thereafter to perform their duties competently. The 1956 population census included no questions directly related to literacy, but the Ministry of Education estimated the situation as on 1 January 1956, and on that basis made the projection for 1966, tabled below, covering persons aged 10 years and upwards. All those who had not attended any school were regarded as illiterate.

Estimated literacy as on 1 January 1966 (in thousands)

Age Group	Males			Females			Total		
	Pop.	Lit.	%	Pop.	Lit.	%	Pop.	Lit.	%
10-14	941	346	36.8	860	134	15.6	1 801	480	28.6
15-19	687	209	30.4	598	61	10.2	1 285	270	21.0
20-24	516	157	30.4	506	23	4.5	1 022	180	17.6
25-34	831	253	30.4	807	38	4.7	1 638	291	17.8
35-44	659	182	27.6	593	6	1.0	1 252	188	14.6
45-54	487	102	21.0	462	-	-	949	102	10.6
55+	459	16	3.4	531	-	-	990	16	1.6
TOTAL	4 580	1 265	27.6	4 357	262	6.0	8 937	1 527	17.1

From the figures above, it will be seen that literacy is improving in each generation of the Sudanese, more especially for females, but as the situation stood in January 1966 the over-all literacy rate for both sexes aged 15 years and over was barely 14 per cent. However, if only the more physically active groups likely to be employable (i.e. males 15 to 54 years old) are considered, the literacy rate rises to about 28 per cent.

11. The President of the Sudan has called for a vigorous drive to eradicate illiteracy in the next six years, and this is one of the most important tasks of the Ministry of Education. Assistance is currently being rendered by the UNDP through UNESCO, with the collaboration of the ILO, in establishing a scheme of work-oriented or functional literacy instruction by which illiterate adults are taught reading, writing, arithmetic and other subjects closely connected with their work and environment.

12. Teaching in literacy circles is conducted by elementary-school teachers and other volunteers, with some local supervisors. The circles are spread over the six northern provinces, in each of which there is a responsible officer in charge, assisted by staff of the local and rural councils. Now that peaceful conditions are being restored in the three southern provinces, it is hoped that the scheme will be extended to them and so make it nationwide in scope. The tables below, based on Ministry of Education statistics, show some details of the classes, enrolments and certificates awarded during the academic year 1967-68 (the most recent available).

Literacy classes and enrolments - 1967-68

Province	Classes			Enrolments		
	Male	Fem.	Total	Male	Fem.	Total
Northern	54	100	154	1 647	3 929	5 576
Khartoum	272	344	616	9 038	11 129	20 167
Blue Nile	183	140	323	6 410	5 709	12 119
Kassala	105	110	215	2 562	2 956	5 518
Kordofan	155	52	207	4 856	1 212	6 068
Darfur	147	30	177	4 474	578	5 052
TOTAL: six provinces	916	776	1 692	28 987	25 513	54 500

Literacy certificates awarded - 1967-68

Province	1st Certificate			2nd Certificate		
	Male	Fem.	Total	Male	Fem.	Total
Northern	615	1 674	2 289	459	436	895
Khartoum	6 420	7 347	13 767	4 779	5 528	10 307
Blue Nile	5 476	4 518	9 994	2 307	2 055	4 362
Kassala	1 091	931	2 022	296	261	557
Kordofan	1 505	252	1 757	696	110	806
Darfur	1 368	168	1 536	884	57	941
TOTAL: six provinces	16 475	14 890	31 365	9 421	8 447	17 868

Educational facilities

13. To place the literacy of the population in perspective, it is necessary to examine the scope and utilisation of the Sudanese educational facilities which are indicated schematically in Annex II. From statistics relating to the 1967-68 academic year, it is observed that over all levels of public and private education the total number of pupils of both sexes combined amounts only to 14.4 per cent of the population in the school-going age bracket of 7 to 18 years.

14. As might be expected, the percentage of enrolments varies from one level to another, but it is significant that while at the lowest (kindergarten) level the enrolment of females roughly equals that of males, it rapidly declines until at university level females occupy just over one out of ten places. Apart from depriving the country of potential skilled workers, this lack of education creates relative backwardness in that half of the population which is mainly responsible for the upbringing of new generations.

15. The problem was discussed in a paper[1] presented at a meeting of the International Institute for Labour Studies in Geneva, in February-March 1972. The author argued that although the situation could be somewhat ameliorated by expanding primary schooling, this would not help those who were already adults. A solution would be to undertake special programmes combining literacy with prevocational preparation and vocational training in all sectors of economic activity, covering rural as well as urban areas. Particular attention should be paid to female education, both in regular schooling, and in the literacy programmes.

Technical education and vocational training

16. A foreword to a report[2] on technical education and training in the country states that the need has been felt for a long time to review technical education below university level,

---

[1] Manpower and Employment Problems in the Sudan, by Sayed Mohamed El Murtada Sustafa, Director of the Manpower Planning Division, Ministry of Public Service and Administrative Reform, 1972.

[2] Report of the International Commission on Technical Education and Training in the Sudan, published by Khartoum Polytechnic Council, 1969.

with the aim of reorganising and reorienting the whole structure to meet the changing and growing needs of the independent Sudan, and to keep pace with advances in the field of modern technology and standards of education. The University of Khartoum is making steady progress with its own task of producing engineers qualified up to degree standards recognised world wide, and is on its way to offering higher studies for postgraduate qualifications. However, it is at the engineering technician level - for which courses are conducted at the Khartoum Technical Institute - that facilities are woefully deficient in variety and standards; they are in urgent need of comprehensive overhaul and reform to bring them into line with those available in the more advanced countries of the world.

17. It was also reported that at the skilled craftsman level technical and vocational training facilities were scattered under several governmental authorities and public corporations, without any co-ordination. As a consequence, there were very wide disparities between them in entry qualifications, structure, content and duration of courses, standards of instructors and methods used, equipment, and levels of skill attained. It is thus obvious that here again there was an urgent and vital need to reform the whole system of craft training, bringing the disparate components into a closer relationship, in order to obtain greater uniformity and effectiveness. This was necessary, not only to satisfy the present and future demands for an adequate supply of skilled craftsmen with much higher standards of skill in every trade, but to provide a basis for further training of the instructors and supervisors, which was badly lacking.

18. The subsequent reorganisation, in July 1970, of the education system as it affects skill training led to the abolition of the intermediate level of technical education, the value of which - in terms of vocational preparation - was found to be most doubtful, even when suitable staff and equipment were provided. The new system, supported by the facilities outlined in Annex II, defers placement in the technical or academic streams until later in the pupil's scholastic career, after six years of primary followed by three years of general secondary education, i.e. a total of nine years' schooling, have been completed. Entry is then possible, according to bent and ability, to a higher secondary academic school with a three-year curriculum, or a higher secondary technical school with a four-year curriculum (the first year being devoted mainly to academic subjects). There are eleven technical schools, and their aim is to produce graduates at what is termed assistent technician level.

19. Education at the tertiary level has now been placed under the control of the Ministry of Higher Education and Scientific Research and the roles of certain of the higher educational institutions revised in order to conform to a pattern

designed to respond more precisely to the needs of the country. Some of the main aspects of this change are briefly outlined below.

Khartoum Polytechnic

20. The objectives of the Khartoum Polytechnic (also known as the Khartoum Technical Institute, or KTI) have been radically altered, and its technician training functions decentralised - as described later. It now provides training for teachers (B.Sc Technical Education) needed for the higher technical secondary schools mentioned in paragraph 18 above.

Senior Trades School

21. The Senior Trades School has been reorganised and will in future be an institute for training junior or assistant technician categories.

Port Sudan Institute of Civil Engineering and Architectural Technicians

22. As part of the process of decentralisation, training in civil engineering previously offered by the KTI has been taken over by the Port Sudan Institute, newly housed in accommodation occupied beforehand by a secondary technical school now moved into premises previously occupied by a defunct intermediate technical school. Many of the existing physical facilities taken over by the institute can readily be utilised or modified to suit its training role.

23. The Port Sudan Institute was established in November 1971, with a planned ultimate enrolment of 160 trainees. The course duration is set at two years, with an intake of 80 trainees per year, but the desirability of extending this to three years was being actively considered before the expert left the country. Courses are intended to cater for the following occupations:

- civil engineering technician,
- draughtsman,
- architectural technician,
- building technician,
- quantity surveyor.

Each course covers 2,400 hours of instruction, conducted at a yearly/weekly/daily rate of 1,200/30/5 hours, and examination marks are apportioned thus: theory - 60; technical drawing - 40; practical - 20. By March 1972 12 civil engineering

technician trainees and 15 draughtsman trainees had been enrolled. The minimum age of entry is 19 years, and the educational requirement is the general certificate of education based on successful completion of 12 years of primary/elementary and secondary schooling. The Institute is residential in character and trainees receive a monthly stipend of £12 for food. It is declared policy to endeavour to enrol the majority of future entrants from graduates of the higher secondary technical schools, because entrants from the academic stream have been found to be less well motivated and find it difficult to understand the instruction.

Atbara Institute for Mechanical Engineering Technicians

24. The Atbara Institute has similar objectives to the institute in Port Sudan, but its activities are confined to the training of mechanical engineering technicians, previously undertaken by the KTI. It was established in December 1971 and occupies accommodation previously used by local intermediate and secondary schools, with workshop and classroom facilities for a total enrolment of 100 trainees in the occupations of production technician, and of mechanical draughtsman.

25. The planned course duration at Atbara is three years, embracing 3,000 hours of instruction, the first year being common to both occupational categories. Instruction covers appropriate practical and theoretical subject matter, with an allocation of 10 per cent to general education. There are 23 trainees currently enrolled - two of the original entrants having dropped out. Hostel accommodation is provided, with the service of a cook, and a stipend of £9 per month is granted towards the purchase of food.

Vocational training facilities

26. Much training of the labour force for modern industry in the Sudan consists of informal on-the-job instruction in the manufacturing plants, or out of doors if the location of the work demands it. There is little planning or co-ordination of training activities, and emphasis is placed on output rather than on the inculcation of skills.

27. The survey covered by this report identified only seven training establishments in the private sector; a few other so-called training departments were found, but in the main, these appear to operate fitfully on a makeshift basis. On the other hand, there are no less than 21 training establishments of various types in the public sector, catering for a wide range of specialised occupational skills employed in

services for which different national authorities are responsible. In addition, there are five governmental centres within the national vocational training scheme, providing courses of instruction in the electrical, mechanical automotive and building construction trades. Annex III includes a list of the establishments in the three categories mentioned above, the operation of those concerned with industrial training being reviewed as necessary in Parts III and IV of this report dealing with the work of the mission and the conclusions and recommendations arising therefrom.

III. WORK OF THE MISSION

Section 1

Survey methodology

28. The primary purpose of the mission was to conduct skill surveys in order to ascertain the existing and developing needs for vocational training in various trades and at different skill levels, including retraining and upgrading of workers. The survey was intended to cover certain trades where training was believed to be urgently required comprising the following four main groups:

- metal trades, including motor vehicle mechanic;
- electrical/electronic trades, including auto-electrician;
- building trades;
- printing trades.

As will be seen from the questionnaire in Annex IV, a total of twenty-two occupations within these groups were surveyed. Skill levels were separated into semi-skilled, skilled, foreman/ supervisor and technician, but provision was also made for recording the numbers of trainees or learners.

29. Considerable thought was given to the problem of deciding upon the most practical and reliable methodology for carrying out the surveys, many discussions being held with government officials, manufacturers, educational authorities and workers' representatives. It soon became obvious that methods which might be suitable for use in a more developed country would not prove successful if used in the Sudan. This huge country has large unpopulated and sparsely populated areas with practically no all-weather roads. Postal facilities are understandably limited and there is widespread illiteracy, so that to obtain reliable data it is necessary to use staff trained for the purpose.

30. After consultations with the responsible governmental authorities, it was decided that the most effective method of securing information was to utilise a carefully constructed questionnaire. A postal survey being inadvisable, the questionnaire was used in combination with a team of suitably trained and briefed interviewers. The whole of the Sudan was to be covered, although huge areas have no significant modern industries, many of the service occupations, such as motor vehicle mechanic, can be found throughout the country. The regional manpower officers

in each of the nine provinces were asked to prepare information on establishments in their regions in both the public and private sectors. A special training course for these officials was held in Khartoum, during which their duties in connection with the survey were explained and the importance of accurate and complete information emphasised. Regrettably, however, in several instances, trained counterpart staff had to proceed to provincial areas to assist in carrying out the work. This took considerable time because of lack of transport facilities.

31. Staff had to be trained as enumerators for the field work of the skill surveys. To this end, a series of instructional notes was prepared and translated into Arabic. These notes were used, in both languages, at training sessions together with excerpts from the relevant ILO Recommendation.[1] In addition, the expert prepared notes for training sessions of manpower department staff and for counterpart training, and for use as guidelines in conducting the survey; they covered ten major points and were studied and discussed in advance before being used in the pilot survey and in the subsequent national survey.

32. A steering committee was formed in which the ILO expert and counterpart governmental officials were able to discuss the work of the mission and proposed plans for conducting the survey with representatives of other governmental departments, the University of Khartoum and of manufacturers, including the local chamber of commerce. In this connection, a letter on the lines of the draft shown in Annex V was prepared in English and Arabic to introduce and explain the survey to proprietors and managers of enterprises scheduled to be visited, and was despatched over the signature of the Minister of Labour. Unfortunately, representatives of organised labour were unable to be present, but the matter had been fully discussed with them earlier and their support and co-operation secured.

33. Valuable assistance was given by the statistical department of the Ministry of Planning in designing the format of the questionnaire, to enable the data provided by it to be readily programmed for computer treatment, and generally to ensure that the operation was placed on a statistically sound footing.

The pilot survey

34. Notwithstanding the precautions taken in the preparatory stage, it was decided that a pilot survey should be

---

[1] Recommendation No. 117 - Recommendation concerning Vocational Training. ILO, Geneva, Switzerland, 1962.

conducted before embarking on the full-scale national survey. The main objectives of the pilot survey were to:

- provide field experience and training and a test for enumerators and supervisors;
- establish the time factor involved and also management response;
- validate the suitability of the questionnaire as a tool for the local conditions;
- test all administrative arrangements such as transport, field checks, schedule handling and other matters.

35. The pilot survey started in December 1970, some five months after commencement of the ILO mission, and was completed in January 1971. It covered what is known as the three towns area embracing Khartoum, Khartoum North and Omdurman, in which 100 industrial establishments of various types and sizes employing 7,759 workers in all were visited.

36. The pilot survey revealed that certain questions did not elicit a meaningful response from management, especially those questions inviting a prediction or estimation of future training requirements. Reasons commonly given for furnishing nil returns to such questions ranged widely over problems which might be expected to beset any enterprise, such as finance, licences for imported material and replacement parts, land, qualified staff. As a result, the questionnaire was amended for use in the subsequent national survey.

37. The pilot survey also provided excellent field experience for the interviewing staff and their supervisors, and showed that for some of them insufficient time had been devoted to their training for a task which was quite new. In many cases it was virtually impossible to secure interviewers of the requisite calibre who could respond to training for the posts available and, as a result of the pilot experiment, it was found necessary to dispense with the services of more than half of the original field staff trainees. This staffing problem was to persist throughout the full-scale national survey, being further aggravated by losses on account of departmental transfers, resignations and dismissals; in all, over four times the number of staff were given training as remained available for the main task which, as a consequence of reduced numbers, took a considerably longer time to complete than had been foreseen.

The national survey

38. After further staff training had been carried out and methodology improved by amending the format of the questionnaire[1] and the accompanying instructions in the manual prepared for use by interviewers[1], in the light of experience gained in conducting the pilot survey, the national survey was officially launched on 15 May 1971. By early January 1972 the field work was completed and 533 establishments with five or more workers had been visited, the survey covering a total labour force of 105,950 full-time paid employees, of whom 96,700 were serving in the public sector and 9,250 in the private sector.

39. The scope of the survey and detailed method of application are fully illustrated by the annexed questionnaire and accompanying instruction manual mentioned in the foregoing paragraph. For ease of reference, a brief outline of the subject matter covered by the nine major questions posed in the survey is given below:

Q.1 Number of employees in each of the twenty-two selected occupations by one of the five skill levels or categories indicated, ranging from apprentice to technician, with total annual turnover in each occupation.

Q.2 Number of employees in each of the selected occupations by skill level or category, requiring upgrading training, with total for each occupation.

Q.3 Total number in each occupation needed to fill vacancies by skill level or category, both now and in the future - shown separately.

Q.4 Whether or not upgrading courses are provided for existing employees; if so, which of five specific methods are used, viz., own courses, courses with other agencies, the national vocational training scheme, correspondence courses, training in other countries - or failing those, any other methods.

Q.5 Willingness to introduce a scheme to encourage employee participation in upgrading training, indicating one or more of three particular incentives, viz., increased pay for graduates, promotion, part-time release of trainees, or alternatively, by some other means.

Q.6 Providing the facilities are or could be made available, an indication of the training programme(s) best suited to the needs of the establishment, and in which new employees would

---

[1] See Annex IV for Questionnaire (five pages), and Annex VI for Manual for Interviewers.

participate, viz., in-plant, out-plant, or both; numbers to be trained in each of the occupations to be stated, based on current and future (up to five years) requirements.

Q.7 Expected sources of recruitment of personnel, viz., vocational training centres, secondary technical schools, elementary schools and other sources; adequacy of known sources in meeting needs; willingness to share cost and participate in local group training schemes.

Q.8 Numbers of learners or trainees on the payroll showing occupations, intakes over the year, trained output expected, duration of courses, minimum age and minimum educational qualifications for entry.

Q.9 Whether or not there is a staff member responsible for supervision of training, a training scheme, a record of trainees' progress, and/or an arrangement for training employees elsewhere; commonts were also invited on future training needs or problems.

40. A comprehensive directory of all the establishments surveyed was compiled, giving against each an establishment code number (ECN) for identification, address and telephone number, the main product or service and the number of employees. For data processing purposes the codified table or frame shown in Annex VII was prepared, further classifying the establishments according to province, town, trade group (four groups covering twenty-two occupations), size (number of employees), and sector (public or private).

Results of the survey

General

41. The survey proved extremely fruitful in acquiring basic information on the size, disposition and occupational pattern of the industrial establishments in the public and private sectors of the Sudan; this is amply illustrated in the following annexes:

Annex VIII — The number of full-time paid employees in each of the nine provinces by sector, ranging from a total of 47,590 in Khartoum province to 1,460 in Equatoria.

Annex IX — The distribution of the 533 establishments by sector, surveyed throughout the 17 towns shown - ranging from 124 in Khartoum to 7 in El Fashier - with the number of employees in each of the four main trade groups covered.

Annex X — The number employed throughout the country in each of the 22 designated occupations, pertaining separately to the four skill levels or categories (technician to semi-skilled worker) plus trainees, and in toto (30,800 in an over-all workforce of 105,950 in the establishments surveyed).

Annex XI — The annual turnover by number and percentage of employees in each of the 22 occupations, according to province, and in toto (1,120 out of the 30,800 employed in all these occupations).

Data extrapolated from the collated information further enabled an assessment of existing and developing needs for vocational training to be made in accordance with the main objectives of the mission and the scope of the survey outlined in paragraph 39 above. The relevant findings in this connection are summarised under the headings which follow.

Upgrading training

42. The numbers of employees requiring upgrading training by occupation (coded) and skill level or category in the public and private sectors respectively, are shown in Annex XII. Annex XIII indicates similar requirements for both sectors combined, stating the totals for each skill level or category in the 22 designated occupations against the six grouped sizes (5 to 9, rising to 500+ employees) of establishments surveyed.

43. From the figures quoted in the above-mentioned annexes it can be seen that of the 30,802 employees whose occupations were surveyed, no less than 14,700 were deemed to require upgrading training. An analysis of the situation is given below:

	Techn	Formn	SkWkr	SSWkr	Trnee	Total
Employed	912	1 963	12 662	11 686	3 619	30 802
Requiring training	612	505	5 843	8 090	-	14 700

In addition to the designated occupations, provision was made for note to be taken of any other occupations in the establishments surveyed, where upgrading training was needed; the number of employees recorded under this heading was 2,160, thus increasing the gross training requirement to 16,860.

44. Regarding the quantitative requirements for training in terms of geographical location and of occupation, the following table indicates the four provinces (of the nine) and the six occupations (of the 22) showing the greatest need:

Province	No.	Occupation	No.
Khartoum	6 763	Fitter and mach. mech.	2 140
Blue Nile	3 752	Diesel mech. (non-veh.)	1 721
Northern	3 632	Motor veh. mech.	1 521
Kassala	1 149	Elec. lineman and c. jntr.	1 427
		Carpenter (general)	1 005
		Blacksmith: Hammersmith	975

Demand for skilled workers

45. As one measure of the need for training, the survey sought to obtain information on current vacancies, and predictions of future requirements (up to five years) for workers in the occupations covered. The response to this question in the pilot survey had been very poor, but as a result of the consequent improvement in methodology, mentioned in paragraph 38, managements of 396 of the 533 establishments in the national survey provided meaningful replies.

46. The resultant statement of current vacancies by occupation and province, in the public and private sectors combined, is tabled in Annex XIV, and similarly in respect of estimated future vacancies, in Annex XV. Both tables are summarised in Annex XVI, showing the provincial distribution of current and future vacancies in all occupations together. From these figures it will be noted that throughout the country as a whole, there were 1,620 jobs open, with 6,044 more vacancies envisaged in the near future, amounting in all to a total potential requirement for 7,664 workers under this heading.

Training provided for employed workers

47. Of the 533 establishments surveyed, 172 (or 32 per cent) reported that upgrading training facilities of some sort were provided for existing workers. Annex XVII lists the number of establishments, by province, which responded positively to the request for this information and it also indicates the relative incidence of use of the six different methods of training specified in the questionnaire. A summary of the situation throughout the country is given below, showing the various methods in descending order of incidence:

Method of Training	Incidence
By own training courses	126
Sending employees to other countries	86
National vocational training scheme	76
Courses with other agencies	68
Methods other than above, or correspondence courses	24
Correspondence courses	15

Training incentives

48. Favourable responses were made by 440 (82 per cent) of the 533 establishments surveyed in respect of willingness to introduce an incentive scheme to encourage employees' participation in upgrading training. Of these, 290 were in the private sector and 150 in the public sector. The following table summarises the position as regards incentive preferences:

Incentive	Responses[1]
Improved rates of pay for course graduate	440
Promotion to positions of greater responsibility	409
Part-time release for training	332
Incentives other than those above	70

The geographical origin, by provinces, of the responses is shown in Annex XVIII and their origin in terms of establishment size (from 5-9 up to 500+ employees) in Annex XIX.

Training of new employees

49. There was a gratifying response to the request for information on the form(s) of training the 533 establishments surveyed would provide for new employees (assuming favourable conditions and possible government assistance to expand) as being best suited to the needs, i.e. in-plant, out-plant, or both - and the estimated numbers of entrants based on current and near future requirements. Only seven establishments failed to furnish the necessary details. An analysis of those received revealed the following countrywide situation in respect of the form(s) of training preferred:

---

[1] From 440 establishments.

Type of training	Establishments	
	No.	%
In-plant	277	52
Out-plant	75	14
Both in and out-plant	174	34
Total	526	100

From the foregoing it will be noted that the largest proportion (52 per cent) of establishments prefer to train new employees in their own plants. The estimated total intake amounted to 3,242 trainees, distributed by designated occupations and provinces as shown in Annex XX and Annex XXI further indicates the location by province of the responding establishments, the four main trade groups concerned, and the estimated intakes by province.

50. Against the above-mentioned estimates in respect of the training of new employees, it transpired from the survey that in the category of learner or trainee, a modest total of 660 young men were receiving in-plant training in the Sudan, and that the output for 1972 in terms of leading occupations was expected to include 162 motor vehicle mechanics, 69 blacksmiths/hammersmiths, 56 fitters/machinery mechanics, 55 carpenters, and 52 printers. However, a great upsurge in this form of training should result if the apprentice legislation prepared by the Government in co-operation with the UNDP/ILO assisted national vocational training scheme becomes effective; this prescribes a one-year period of training in industry, following two years in a vocational training centre.

51. Some indication of the likely over-all worth of present in-plant training may be gained from the following information resulting from questions posed in the survey on supervision of training, and on the extent to which training schemes are available:

Sector	Supervisor appointed	Scheme prepared
Public (165 plants)	52 (32%)	84 (51.2%)
Private (368 plants)	165 (45%)	34 (9.2%)

Apart from a few large industrial enterprises, such as Sudan Textiles, Shell Oil Refinery (Port Sudan) and Bata Shoes, there is little properly organised training in the private sector. There is also much room for improvement in the quality and quantity of training activities in the public sector.

Section 2

Vocational training facilities

Scope of the examination

52. In addition to conducting the national survey of vocational training needs described above, the expert was instructed to examine the existing and planned vocational training facilities designed to meet those needs. Because of their actual and potential contribution to vocational training, relevant details of the technical institutions in the school system were included, as well as the institutions primarily devoted to such training outside the system. The results of the examination, which follow, should be considered against the background portrayed in paragraphs 4 to 27 of this report.

Higher secondary technical schools

53. Of the eleven recently reconstituted higher secondary technical schools (HSTS) listed in Annex XXII, five are intended to specialise in mechanical engineering (but this includes some electrical work) and five in civil engineering (building trades), while one in Port Sudan will cover both disciplines. Because of local industrial demands, the HSTS at Juba, the capital of the southern province of Equatoria, will in addition provide courses in leathercraft. It is also hoped to introduce into the schools training in home economics for girls, and in the skills needed in agricultural, veterinary, and commercial activities. All but one of the schools (at Kareima) were visited and reported upon, eight by the ILO expert and two by national counterpart staff trained by him. The Atbara HSTS was visited as recently as March 1972 by the expert and counterpart staff. This is one of the best-developed schools, and the following description of it will serve to illustrate their nature and work.

54. The Ministry of Education is responsible for the Atbara HSTS, but it is proposed to delegate this responsibility to the local government authorities in the near future. The following are some pertinent factors:

- objectives: to provide students with general and technical education, in order to prepare them for entry into a suitable occupation at about the assistant technician level, or alternatively for admission into an institution of higher technical learning;

- specialisations: in the four fields of automechanics, machine-shop practice, electrical installation, and welding and forging;

- workshop facilities: stemming from the reorganisation of the technical institutions, in December 1971 the school relinquished its workshops to the newly created Atbara Institute for Mechanical Engineering Technicians, and in turn acquired the workshops of the local intermediate technical school, some distance away;

- course duration: four years, in which are included an allocation of time to general academic subjects, especially during stressed in the first year;

- capacity: 100, but there are plans to increase this to 200; currently, nearly half of those enrolled are from the southern provinces; education is free for all, but southerners also receive their keep and a small personal allowance of 50 piastres a month, whereas northerners - who mostly live at home - do not receive the allowance and must contribute £3 per year towards the cost of textbooks and materials;

- admission: after selection by the central administration (which also decides the size of intake), in order of merit and taking account the choice of the applicant at an interview; minimum qualifications are attainment of age 16 and possession of a junior secondary school certificate;

- output: as an example, with a negligible dropout rate, the 49 graduates in the 1970-71 school year comprised 19 in automechanics, 16 in machine-shop practice, and 14 in electrical work;

- placement: graduates receive a certificate, but there is no service to assist in placement in employment, nor any form of follow-up;

- liaison: enquiries in this connection elicited the information that the issue was under study and real co-operation between industry and technical education was looked forward to.

55. In varying degrees, but without exception, the schools visited were found to have extremely ill-equipped laboratories and workshops, which made it impossible in most cases to effectively implement the planned practical training exercises. There were shortages and sometimes a complete absence of the necessary equipment facilities and services in

the laboratories. Similar conditions obtained in the workshops, where such machine tools as did exist were usually inadequately maintained and often unusable for lack of spare parts. In one machine shop, for example, three out of seven lathes were out of order, and other machines were covered in dust.

56. Many of the teachers of technical subjects in these schools were well qualified, some being graduates of the Khartoum Senior Trades School, and most of the senior staff had received valuable overseas training and experience. Others, however, had no pedagogical training, and the majority no industrial experience with which to reinforce their practical teaching work in the schools. A great number of them appeared discouraged by the adverse teaching conditions, and many expressed dissatisfaction with salary scales and the absence of provision for adequate and regular increments.

57. In the face of this evidence, the expert considered that the schools were failing to achieve any worthwhile degree of success in attaining their intended objectives, and was compelled to fully endorse the statement regarding them made in a report published in 1969, by the International Commission on Technical Education and Training in the Sudan - already mentioned in paragraph 16. The statement reads: "We are unhappy about their place in the education system .... In one such school we were appalled by the lack of contact with a readily available industry, by the excessively high ratio of students to instructors, by the inadequate and ill-maintained equipment, by the lack of well-designed and progressive exercises and by the inculcation of bad habits which would be extremely difficult to eradicate later. We were unanimous in our opinion that the boys would be better prepared to enter industry without such training than with it, an opinion which was shared by many employers with whom we made contact. It would be wrong to assume that all such schools were similar to that cited - we had certain evidence to the contrary, but at least some of the criticism is general to them all, including the difficulty of finding a sufficient number of skilled instructors with adequate industrial experience."

Khartoum Technical Institute (Khartoum Polytechnic)

58. As the forerunner of the present polytechnic, the Institute was founded in 1950 to train technical assistants for the public works service. In the following year it was taken into the educational system, and thereafter mechanical and electrical engineering, commerce and art were introduced into the curriculum. Admission was also widened to include aspirants for employment in the private sector.

59. For the first seven years, engineering assistant/technician level training was provided in 3-year courses, based on examination standards required for the British Ordinary National and the final City and Guilds of London certificates. Later, course duration was extended to four years, and a pronounced trend developed towards the acquisition of higher professional qualifications, rather than those required by technician categories. This resulted in duplication of the work of the engineering faculty of the University of Khartoum, and lowering of the output of much-needed technicians.

60. Consequently, and in accordance with the Government's intention that training in the technical education institutions should respond more precisely to the country's needs, the Ministry of Higher Education and Scientific Research informed the expert that the four-year courses at the polytechnic will all be phased out by 1974, several having already been replaced by two-year courses. The position in this connection at the time of the survey was as follows:

	Location
- Four-year courses (four)	
Surveyors' Institute courses	Khartoum Polytechnic
Department of Fine Art	"
Technical teacher training	"
Accountancy, banking and costing	Port Sudan Institute
- Two-year courses (eight)	
Electrical engineering (technician) and mechanical engineering (in Senior Trades School)	Khartoum Polytechnic
Laboratory technicians (for schools)	"
Secretarial (typing, clerical, etc.)	"
Spinning and weaving technicians	"
Survey technicians	"
Mechanical engineering technicians	Atbara Institute
Civil engineering and architectural technicians	Port Sudan Institute
Agricultural engineering technicians	Gadaref Institute

The spinning and weaving technicians' course was of particular interest because of the close and beneficial liaison with industry: the managing director of the huge Sudan Textile Mills

showed keen interest in the training, both as an industrialist and in his capacity as chairman of the Institute's Council. The two-year course includes one day per week in the mills, in which the trainees also spend one year on in-plant training following the course. According to the responsible minister, this industrial experience transformed a dissatisfied and disgruntled group of young men into an efficient and enthusiastic team with high morale.

Khartoum Senior Trades School

61. Following experience gradually gained since 1905 of the benefits of organised industrial skills training, the Khartoum Senior Trades School (KSTS) was established in 1960 at the Khartoum Technical Institute. In 1964 it moved to its present site with excellent accommodation and equipment, the acquisition of which was greatly assisted by funds from The United States Agency for International Development (USAID). These funds also provided the services of eight technical advisers from the Dunwoody Institute of Minneapolis, USA.

62. An outline of the aims of the KSTS and the facilities to meet them is given below; it is important to note that this relates to the situation up to the end of 1971. As mentioned in paragraph 21, the school was then reorganised with a view to concentrating on graduation of junior or assistant technician categories:

- objectives: the major objectives (in addition to some commercial training) covered the provision of training for entry as craftsmen into certain skilled occupations by selected graduates from what were then called post-intermediate trade schools; for upgrading the skills of workers already employed; for student technical/trade teachers selected from KSTS graduates or staff of the post-intermediate schools; for employed technical/trade teachers in the form of refresher training; for supervisors in supervisory techniques, by short courses of instruction;

- courses: of two years' duration for entry-workers in auto and diesel mechanics, brickwork, cabinet making, carpentry, electrical installation, machine-shop practice, and plumbing - with a total intake of about 155 per year, ranging from 15 to 25 trainees in each occupational skill; of various other periods for technical/trade teachers undergoing basic and refresher training, supervisors, and employed workers receiving skill upgrading courses;

- curriculum: in respect of the major activity of the school in conducting two-year skill training courses for entry-workers, this included 50 per cent devoted to workshop practice, the remainder covering related theory and some general education; it was followed by a third year in industry, but this part of the curriculum was not effectively supervised;

- physical facilities: these were of a very high standard, comprising 38 modern buildings housing ten large well-equipped workshops, classrooms, stores, laboratories, hostels for 240 students, libraries, a language laboratory, 22 staff quarters, tennis courts, football fields and other technical, domestic and sporting amenities providing an extremely good seat of learning.

63. Despite the excellence of the facilities provided, much criticism had been directed at the main trade training programme designed to produce skilled entry-workers for industry. Trainees had usually enrolled after having received some form of trade education from the age of eleven in their previous intermediate technical school; with a further two years on the course at the KSTS, a total period of ten years spent on technical education and trade training elapsed before the individual was ready for employment. It was perhaps understandable that after this period of preparation, the graduate should feel entitled to a position higher than craftsman. A visiting French inspector-general of education who looked at the situation in 1966 reported that "the KSTS, the post-intermediate trade schools, and the various training centres had no common working basis. The KSTS and post-intermediate schools tended to put the students off manual work, instead of supplying industry with reliable workers. Most of the students tried to continue their studies, but more often than not failed to do so .... It seemed very likely that many felt that they had lost social status, and so pined away in mediocre jobs instead of earning their living honestly with their hands." As mentioned earlier, the KSTS was reorganised towards the end of the stay of the ILO mission covered by this report, and some time will be needed before it is possible to judge the degree of success in its changed role.

National vocational training institutions

64. Apart from the facilities for vocational training within the school system described above, there is a group of five national vocational training institutions in the Sudan catering predominantly for training in industrial skills.

Responsibility for these centres rests with the Department of Labour in the Ministry of Public Service and Administrative Reform; they include the following - a fuller description being provided in the annexes stated against each:

- The Upgrading Training Centre, Khartoum, established with UNDP technical assistance afforded through the ILO in 1957-62. (Annex XXIII)

- The Apprenticeship Vocational Training Centre, Khartoum, established with German technical assistance in 1963. (Annex XXIV)

- The Kosti Vocational Training Centre, opened in 1967. (Annex XXV)

- The May Vocational Training Institute, Wau, established in 1969. (Annex XXVI)

- The Wad Medani Vocational Training Centre, established as a pilot centre in 1970, as a component of the national vocational training scheme (SUD 21) project undertaken with UNDP assistance provided through the ILO. (Annex XXVII)

Departmental vocational training institutions

65. As mentioned in paragraph 27, there were no less than 21 other training establishments of various types in the public sector, designed to supply the wide range of skills needed in the services for which the different national authorities are responsible. Of these, the Mechanical Transport Department's School, the Sudan Railways School, and the Tozi Farm Machinery Training Centre were considered to be most significant within the context of the survey, and they are accordingly described in Annexes XXVIII, XXIX and XXX respectively.

IV. CONCLUSIONS AND RECOMMENDATIONS

General

66. Thanks to the help and co-operation of the many government officials, and the management of establishments in both the public and private sectors, the national survey was completed most successfully. The difficulties met in the initial stages were overcome as a result of experience gained in the pilot survey, which led to consequent changes in methodology before embarking on the main task. A large amount of detailed information on industrial skill training is now in the hands of the Ministry of Public Information and Reform. In addition, the exercise has provided useful survey procedure and a body of staff trained to use it. This should prove of great value if any other surveys have to be undertaken in the future.

67. There was a generally good response from the 533 establishments approached, their size varying upwards from five employees, engaged in one or more of 22 designated occupations, at five possible levels of skill - including learners. As might be expected, meaningful answers to the questions posed regarding predicted future requirements of workers proved the most difficult to obtain, with no more than 396 out of the 533 establishments providing complete information. On the whole, the data gathered was sufficiently comprehensive, and all available means of cross-checking were used to ensure accuracy.

68. The result of the survey is not an end in itself, however; it must be regarded as a contribution to a larger plan needed to shape the training programmes and establish the facilities required to produce the human resources in numbers and quality, whereby the country's increasingly rapid economic progress on the industrial front may be sustained and made viable. Although the conclusions to be drawn from the survey in this connection are implicit in the description of activities and results contained in Part III of this report, it is appropriate to refer here on some of the most important of them.

69. It is noted, for instance, that of the 30,802 workers whose occupations were surveyed, no less than 14,700, or nearly half, were deemed to require upgrading training. On the other hand, only 172 (or 32 per cent) of the establishments had provided any form of upgrading training for their workers, either in-plant or elsewhere. Where this training was provided, the employers much preferred to use in-plant facilities (126 cases) rather than take advantage of the country's institutional

facilities (76 cases). The reason for favouring in-plant upgrading training is that most institutional courses have a set duration of six months, and cost-conscious employers in the private sector are averse to keeping workers on the payroll for that time, despite the benefits likely to be gained from the betterment of their skills. Even in the public sector, where paid absence on courses is more freely permitted, the impression was gained that attendance on upgrading courses is part of the procedure for promotion - perhaps occurring once in a man's career - rather than a step towards securing improved performance of the duties in his grade.

70. As regards the important question of training new workers for entry into employment, to which there was a very full response, 52 per cent of employers were found to prefer in-plant methods against 14 per cent who favoured institutional training - although 34 per cent opted for a combination of the two. The latter system largely applies to the training of apprentices which it is envisaged will be covered by the legislation newly drafted in collaboration with the national vocational training scheme project currently being assisted by UNDP and the ILO (see Technical Report No. 1[1]).

71. It transpired from the data collected on learners/ trainees that a total of 660 young men was receiving in-plant training throughout the Sudan, but a great upsurge in apprenticeship should result from enactment of the new legislation, provided that the scheme is properly publicised, and effectively implemented at shop-floor level, with adequate training facilities and supervision. The survey revealed that there was very considerable room for improvement in both of these aspects which, of course, apply to journeymen as well as apprentices and other learners under training. Apart from a few large enterprises, there is little organised in-plant training in the private sector, only 9.2 per cent of establishments having any sort of prepared scheme; the public sector, with generally larger establishments, stood at 51.2 per cent in this respect. As for supervision of training, it was found that 45 per cent of plants in the private sector employed an individual charged with this duty, against 32 per cent in the public sector.

72. The reasons why so few establishments opted for institutional training of new employees was not specifically sought by the survey questionnaire, but enquiries made in developing the national vocational training scheme, described

---

[1] Sudan National Vocational Training Scheme (SUD 21), Technical Report No. 1, ILO, 1972 (hereinafter referred to as the technical report).

in the above-mentioned technical report, had revealed that both employers and labour unions were reluctant to consider direct employment of institutional graduates. This was because of the stated fear that recruitment of educated and properly trained workers might create labour problems, although the survey mission also ascribed it - in part at least - to the fact that such training given in the past had not always corresponded to the real needs of industry.

73. Having surveyed the industrial vocational training needs of the country, the mission turned to an examination of the facilities to meet them. As will be seen from section 2 of Part III of this report, institutional training is dispersed through the technical educational system, the national vocational training (Department of Labour) system, the various public departments (railways, motor transport, etc.), and a few large private undertakings. There were found to be differences in the quality of training provided, and a lack of co-ordination of the programmes of the various authorities responsible for their planning and execution.

Recommendations

74. The following recommendations are offered as a means of eliminating or reducing some of the difficulties mentioned and of ensuring that training programmes are adapted to the country's requirements.

Co-ordination of vocational training programmes

75. In view of the number of different independent authorities responsible for vocational training throughout the Sudan, the variations in the quality of the training offered, and the high cost of providing the required facilities, it is recommended that a standing co-ordinating body be constituted with power to scrutinise and decide on the form of all institutional vocational training programmes, irrespective of the ministry or authority responsible for their implementation. The endorsement of programmes in the public sector should be a prerequisite to authorisation by the treasury of any expenditure on facilities.

76. It is appropriate that the lead in constituting this co-ordination body should be taken by the National Vocational Training Council established by the Government as part of the UNDP/ILO project mentioned. The body should include, in the first place, representatives of governmental ministries concerned with the public service, education and youth, and the treasury, under the chairmanship of the governmental under secretary for planning.

Upgrading training

77. The survey disclosed a great and widespread need for upgrading the skills of employed workers, which is only partially met by six-month courses at the Upgrading Vocational Training Centre. It is recommended that upgrading training facilities be expanded by the introduction, at this and other centres, of more numerous and shorter courses, making use of the flexible modular system of instruction designed to cater precisely for the occupational skill requirements of individual workers. Training should be geared to the acquisition of a recognised qualification dependent on the attainment of the minimum skills demanded by a particular trade classification, as specified by the National Council. As in-plant training develops in the Sudan, it is possible that the facilities of the large establishments could also be used for this purpose (possibly on a group enterprise basis), provided that the instruction is adequately supervised and the examination standards properly maintained.

78. In considering the different skills in which upgrading training is required, the following occupations deserve particular attention:

- over 780 plumbers and pipe fitters, and 680 electrical wiremen required training; in view of the safety and health hazards involved, it is recommended that early and effective measures be taken to provide this, and that a time limit be placed on the employment of non-registered craftsmen;

- nearly 650 printing workers in all branches of the trade required training, for which no instructional facilities exist in the Sudan. The leading printers are keen to develop a scheme, but in view of the high capital cost of equipment needed to establish an institution, it is recommended that the Government explore the possibility of attaching a training-cum-production unit to a large public printing facility in Khartoum, to be operated within the national industrial vocational training scheme.

Training of new employees

79. The reluctance of the great majority of employers and of the labour unions to accept graduates of vocational training institutions will have to be overcome if the national vocational training scheme is to prove successful. The problem is to some extent a social one, prevalent in many developing

countries, and often referred to as the "white-collar" complex. The remedy lies in the creation of an affluent "blue-collar" society and a respect for the dignity and importance to the economy of skilled manual work. This is obviously a long-term process, but much can be done to hasten it by improving the quality of the graduates of the institutions, and ensuring that they are well trained in the employable practical skills needed by industry. It is recommended, therefore, that the national scheme should continue to concentrate on the qualitative aspects of skill training specifically designed to meet occupational needs.

In-plant training and apprenticeship

80. The national vocational training scheme, through its specialist section, is actively developing in-plant training programmes in industry; this should continue, in order to improve the situation regarding lack of preparation disclosed by the survey. The survey also showed that many plants had no designated official responsible for the supervision of such training, which forms an important complement to institutional training under the new apprenticeship legislation. The national scheme already provides for training of instructors, but to gain the vital interest of managements and assist in developing and supervising in-plant training, it is recommended that short courses for in-plant training officers be introduced at the Wad Medani pilot centre.

Instructor training

81. Although the survey did not specifically seek information under this heading, the expert found that there was an over-all shortage of instructors with the requisite craft and instructional skills. Capable instructors (including in-plant trainers) are undoubtedly the backbone of any industrial training scheme. They should therefore be well trained and be afforded adequate career prospects within their calling. This point was brought out in the technical report on the national scheme, which provides for instructor training in the curriculum of the Wad Medani pilot centre, although no international expert in this particular field was assigned. The competence of instructors is especially relevant to the quality of institutional graduates, about which criticism has been voiced by employers (vide paragraph 79). In view of the importance of the matter, it is recommended that - in line with proposals already made in the technical report - high priority be accorded to the further development of instructor training (if necessary, with the assistance of an expert) and to the formation of a national corps of instructors with defined career prospects.

The higher technical secondary schools

82. The higher secondary technical schools are considered to be failing to achieve their objectives in so far as vocational training is concerned, for the reasons stated in paragraphs 55 to 57. To bring these schools up to a standard where they can effectively assume their role in providing this training, it is recommended that the measures briefly outlined below be adopted:

- teachers of industrial subjects to be recruited from experienced skilled workers, after undergoing a technical teachers' course of at least one year, and provided in such numbers as will ensure adequate staffing of courses;

- conditions of service for teaching staff, especially as regards salaries, grades and increments, to be made more attractive and to compare favourably with those offered by industry;

- quantity and quality of equipment, tools and facilities for laboratory and workshops to be brought up to standards appropriate to the number of students and the predetermined levels of skill they are expected to attain;

- regular and thorough inspection of the practical and theoretical work of the schools to be introduced, with attention to the standard of maintenance of tools, equipment, buildings and other physical facilities;

- residential facilities to be progressively and substantially reduced, and replaced by a less costly and less wasteful system of boarding allowances or subsidies.

Several of these measures are in accord with the findings of the International Commission on Technical Education in the Sudan, published in 1969. On the whole their adoption will add to the cost, and some may prove administratively difficult to introduce. Nevertheless, it is urgently necessary that some action be taken soon if the standards in these schools are to be raised sufficiently to permit them to contribute effectively to vocational training in the Sudan.

83. While the measures advocated above would improve the standard of instruction in the higher secondary technical schools, and thus the acceptability of graduates by industry, they would do little or nothing to mitigate the socially divisive attitudes arising from the existence of a parallel system of higher secondary academic schools catering for the same age groups. This problem has been solved elsewhere by

the establishment of unified multilateral secondary schools combining technical and academic disciplines, where students of like ability, but differing interests, are taught common core subjects with various specialised options available according to individual bent and inclination. The above-mentioned commission fully defined the advantages of these multilateral schools in their report to the Government referred to in paragraph 16. Although the proposed improvement of the higher secondary technical schools should not be delayed, it is recommended that the possibility also be explored of establishing a pilot multilateral secondary school in the Khartoum area, in order to demonstrate and test the concept.

National vocational training institutions

84. Following an examination of the situation affecting the national vocational training institutions, it is recommended:

- that the Khartoum Upgrading Vocational Training Centre be provided with adequate supplies; that, where necessary, its instruction be better organised and supervised, and that entry tests include a test of a mathematical ability;

- that the Apprenticeship Vocational Training Centre, Khartoum, whose standards are commendable in every respect, review the length and content of its three-year courses, to bring them into line with the two-year institutional apprenticeship courses developed under the national legislation;

- that the Kosti Vocational Training Centre, in the interests of economy and efficiency and in accordance with an alternative proposal of a governmental evaluation committee in 1971, be closed; training should be transferred to the Wad Medani Centre or El Obeid Centre (if established - see later recommendation), lodging or similar allowances being paid to candidates from the Kosti area;

- the May Vocational Training Institute, Wau, should be further equipped and expanded in order to cater for the increased demand for skills resulting from the rehabilitation work in the southern provinces, following cessation of strife there; it is believed that bilateral assistance may be available in this connection;

- the Wad Medani Vocational Training Centre should expand its instructor training programme in order to meet increasing needs (see paragraph 81) - while bearing in

mind the high instructional standards required, and should place emphasis on the training of agricultural machinery mechanics in response to demand arising from farm mechanisation (see paragraph 85 regarding Tozi Farm Machinery Training Centre).

Departmental vocational training institutions

85. As regards the departmental vocational training institutions, it is recommended:

- that the Mechanical Transport Department School, Khartoum, which is participating in a pilot apprenticeship programme under the national scheme, should adopt the measures already proposed by officials assigned to the scheme, concerning the provision of training for private sector apprentices, qualifications of instructors, adequacy of tools and equipment, in-plant programmes, and supply of repairable vehicles;

- that the Sudan Railways School, Gebeit should be transferred to the railway town of Atbara, apprentice training remodelled in line with the national scheme legislation, and the facilities expanded to cope with the demand for training; furthermore, in connection with railways training as a whole, a competent full-time highly graded director be appointed to establish a well-organised central training department responsible for this activity throughout the system; these points should be regarded as supplementary to, and endorsing those made by a later specialist mission on railways training;

- that - in order to avoid duplication of effort and wastage of scarce resources - the Tozi Farm Machinery Training Centre, which is equipped to cater for driving, operation and maintenance of farm machiney, should take up the question of the proposed training of mechanics with the Wad Medani Centre, as the latter is equipped to train craftsmen at this level and in fact is likely to embark on a programme for agricultural machinery mechanics.

Expansion of vocational training facilities

86. Both the upgrading and apprenticeship vocational training centres in Khartoum are well situated to handle the increased training demands that will quickly follow implementation of the planned apprenticeship and vocational training legislation. In order to further provide for training in this

industrial area, without involving excessively heavy capital expenditure, it is recommended that if necessary, the Senior Trades School and the Mechanical Transport Department's School in the same area be utilised, with a third possible site in Omdurman at the secondary technical school.

87. To serve the provincial areas elsewhere, it is recommended that vocational training centres be established at the following locations, in the order of priority indicated:

- Juba, Equatoria province: the new centre should be separate from any centre for vocational preparation which may be established by the Ministry of Youth, but training should be co-ordinated;

- El Obeid, Kordofan province: a centre situated in the provincial capital would be well placed to serve a large and developing area to the south west of Khartoum; it is on the railway and airline route, and the most pressing training needs will be in automotive and building trades;

- Atbara, Northern province: the railways vocational training facilities transferred from Gebeit, graduates of which should be free to accept employment in either the public or private sector.

88. Looking further ahead, it is considered that to meet growing provincial demand for vocational training it may be necessary to establish a centre in Kassala province. Bearing in mind the proposed development of mechanised agriculture in that area, it is recommended that the centre be located in Gedaref. This would complete a nation-wide group of institutional facilities which - if developed in accordance with the foregoing recommendations - should make a most substantial contribution to the progress of the national vocational training scheme.

Vocational guidance and employment opportunities

89. In undertaking the survey described in this report, it was observed that there was a complete absence of vocational guidance which is so necessary if the country is to obtain maximum benefit from its educated and trained young people. In addition to his main task, the expert was able to proffer advice and give some staff training in the essential features of the vocational guidance required. To ensure the development of a properly organised service in this field, it is recommended that, if it has not already done so, the Government should establish a vocational guidance section in the appropriate

ministry, with expert assistance in keeping with the job description prepared by the expert. Publicity should also be given attention, particularly in regard to the attitudes of both employers and workers to the dignity of manual labour and the value of craft skills. On the larger issue of creation of employment opportunities, and on the basis of two memoranda[1] prepared for the Government by the expert, a request was submitted to the ILO in November 1971 for the services of a comprehensive employment strategy mission, within the framework of the ILO World Employment Programme.

Finance

90. Consideration of the recommendations made in this report gives rise to the question of the cost of their adoption and indeed of the whole national vocational training scheme as affected by the new legislation, which will greatly increase training activities throughout the Sudan. This, in turn, raises the basic question of whether an employer should contribute towards the cost of vocational training provided for his workers by governmental institutions, or whether - like education - the cost should be covered (with some exceptions) from the public purse. If the Government decides that the cost, or part of it, should fall on the employer, it is recommended that a study be made of the various industrial training levy systems in operation today in a number of countries.

---

[1] Quotations from published World Employment Programme and other papers on employment in the Sudan and other developing countries. T.R. Buxton, April 1971 and June 1971.

ANNEX I

(Reference para. 5)

PROJECTION OF THE MALE POPULATION
AGED 5 TO 19 YEARS ON 1 JULY 1966 TO 1975

(in thousands)

Age	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
5	236	240	245	252	260	269	277	286	294	303
6	231	235	239	244	251	259	268	276	285	295
7	226	231	234	238	244	251	259	268	276	285
8	220	225	230	233	237	243	250	258	267	275
9	214	219	225	229	232	236	242	250	257	266
5-9	1 127	1 150	1 173	1 196	1 224	1 258	1 296	1 338	1 379	1 423
10	209	213	218	224	228	232	235	242	249	257
11	204	208	212	218	223	227	231	234	241	248
12	197	203	207	212	217	222	226	230	234	241
13	189	196	202	206	211	216	221	225	229	233
14	181	188	195	201	205	210	215	220	224	228
10-14	980	1 008	1 034	1 061	1 084	1 107	1 128	1 151	1 177	1 207
15	166	179	187	193	200	204	209	213	219	223
16	152	165	178	186	192	199	203	207	212	217
17	145	151	164	176	184	191	197	202	205	211
18	137	144	150	162	175	183	190	196	200	204
19	128	136	143	148	161	174	182	188	194	198
15-19	728	775	822	865	912	951	981	1 006	1 030	1 053

ANNEX II

(Reference paras. 13 and 18)

SCHEMATIC OUTLINE OF EDUCATIONAL FACILITIES[1]

Grade	Age	Institutions					
18	24	University of Khartoum	6				
17	23		5				
16	22		4			Khartoum Polytechnic 2- and 4-year courses	4
15	21		3	Higher technical institutes	2		3
14	20		2		1		2
13	19		1	Higher secondary technical schools	4		1
12	18	Higher secondary academic schools	3		3	3rd yr Apprtce[2]	3
11	17		2		2	Vocational training centres	2
10	16		1		1		1
9	15	General secondary schools	3				
8	14		2				
7	13		1				
6	12	Elementary or primary schools	6				
5	11		5				
4	10		4				
3	9		3				
2	8		2				
1	7		1				

[1] Including vocational training centres catering for apprentices.

[2] May be in-plant or institutional.

ANNEX III

(Reference para. 27)

VOCATIONAL TRAINING ESTABLISHMENTS

A. Public Sector (Specialised)

1. Customs Training Institute
2. Dental Assistants' School
3. Firemen's Training Centre
4. Fisheries and Hunting Training School
5. Forest Rangers' College
6. Higher Teacher Training Institute
7. Mechanical Transport School
8. Medical Assistants' School
9. Midwifery School
10. Police Officers' College
11. Prison Officers' College
12. Prisoners' Training School
13. Public Health College
14. Senior Nursing College
15. Agricultural Institute
16. Sudan Airways Training Centre
17. Sudan Railways Technical School
18. Telecommunications Training Centre
19. Telecommunications Training Centre (Telephones)
20. Water Well Drilling Training Centre
21. Farm Machinery Training Centre

B. Public Sector (National Scheme)

1. Upgrading Vocational Training Centre
2. Apprenticeship Vocational Training Centre
3. May Vocational Training Institute
4. Wad Medani Vocational Training Centre (Pilot)
5. Kosti Vocational Training Centre

C. Private Sector

1. Bata (Footwear) Training College
2. Fatahalla's Tailoring and Embroidery Institute
3. Gamhoria Typing Institute
4. Mahdia Modern Tailoring and Embroidery Institute
5. Port Sudan Oil Refinery (Instrument Technician)
6. Sham's Typing Institute
7. Sudan Textiles Ltd., Training Centre

ANNEX IV

(Reference paras. 28 and 38)

جمهورية السودان الديمقراطية

THE DEMOCRATIC REPUBLIC OF THE SUDAN

وزارة العمل

MINISTRY OF LABOUR

ص.ب .....

P.O.BOX .....

تليفون .....

TEL.....

إدارة القوى العاملة والتدريب

MANPOWER AND TRAINING DEPARTMENT

حصر الاحتياجات الصناعية للتدريب المهني

SURVEY OF INDUSTRIAL VOCATIONAL TRAINING NEEDS

CONFIDENTIAL: INFORMATION FURNISHED ON THIS RETURN WILL NOT BE PUBLISHED IN ANY FORM WHICH WILL IDENTIFY THE ESTABLISHMENT CONCERNED, NOR WILL COMPLETING THIS FORM SIGNIFY ANY COMMITMENT WHATSOEVER.

سري

FOR OFFICIAL USE ONLY. للاستعمال الرسمي فقط

I. NAME OF ESTABLISHMENT: _____

(١) اسم المنشأة

II. ADDRESS: _____

(٢) العنوان

III. TYPE OF INDUSTRY: _____

(٣) نوع الصناعة

IV. MAIN PRODUCT OR SERVICE: _____

(٤) نوع الانتاج او الخدمة الرئيسية

V. SECONDARY PRODUCT OR SERVICE: _____

(٥) نوع الانتاج او الخدمة غير الرئيسية

VI. TOTAL NUMBER OF FULL-TIME PAID WORKERS: | | | | | |

ON.....Date.

(٦) اجمالي عدد العاملين طول اليوم بالاجر في التاريخ

FOR OFFICIAL USE ONLY.

VII. ESTABLISHMENT CODE NUMBER | | | | |

(٧) الرقم الرمزي للمنشأة

VIII.

PROVINCE	المديرية	
TOWN	المدينة	
SIZE OF ESTABLISHMENT	حجم المنشأة	
TYPE OF INDUSTRY	نوع الصناعة	
SECTOR	القطاع	

IX. NAME AND POSITION OF PERSON MAKING REPORT. الاسم والوظيفة الشخص الذي يرد على الاستبيان

SIGNATURE.....

POSITION.....

X. NAME OF INTERVIEWER.....

(١٠) اسم الشخص الذي يجري المقابلة

FIELD CHECK BY ..... مراجعة في الحقل

OFFICE SCRUTINY.....

PART 1(A) : THE NATURE OF THE ESTABLISHMENT

الجزء الأول (أ) : طبيعة المنشأة

CODE NO	TRADES & OCCUPATIONS	Q.1. NUMBER of EMPLOYEES IN EACH TRADE س.١. عدد المستخدمين في كل حرفة						ANNUAL TURNOVER IN COL. F	المهن والحرف	
		TECHNICIANS فنيون A ١	FOREMEN مشرفون B ب	SKILLED WORKERS عمال مهرة C ج	SEMI-SKILLED عمال شبه مهرة D د	TRAINEES or LEARNERS E هـ	TOTAL المجموع F و	الفقد السنوي للعاملين G ز		
	1. METAL TRADES								الحرف المعدنية	١-
101	BLACKSMITHS; HAMMERSMITHS								الحدادون وعمال تشغيل المطارق الميكانيكية والمكابس	١٠١
102	DIESEL ENGINE MECHANICS (NON VEHICLE)								ميكانيكو مكنات الديزل (غير العربات)	١٠٢
103	EARTH-MOVING MACHINERY (INC. TRACTOR)								ميكانيكو آلات تحريك التربة (بما فيهم ميكانيكو التركتورات)	١٠٣
104	FITTER AND MACHINERY MECHANICS 1.								براد وميكانيكو آلات (عموميون)	١٠٤
105	MACHINE-TOOL OPERATOR-[illegible]								عامل تشغيل ماكنة تشكيل المعادن	١٠٥
106	MOULDERS AND CORE-MAKERS.								عمال سباكة المعادن وصنع دليل السباكة (القالب)	١٠٦
107	PLUMBERS AND PIPE FITTERS.								سباكو صحيون وبراد والمواسير	١٠٧
108	REFRIGERATION AND AIR CONDITIONERS,								العاملون بالتبريد والتكييف	١٠٨
109	SHEET METAL WORKERS,								العاملون بالألواح المعدنية	١٠٩
110	WELDERS AND FLAME CUTTERS.								لحامون وعمال قطع باللهب	١١٠
111	MOTOR VEHICLE MECHANICS P.D. 2.								ميكانيكو عربات (بترول وديزل)	١١١
	2. ELECTRIC & ELECTRONIC								كهرباء والكترونات	٢-
212	VEHICLE ELECTRICIANS.								كهربائيو مركبات	٢١٢
213	ELECTRIC LINEMEN AND CABLE JOINTERS.								كهربائيو خطوط وتوصيل كيبلات كهربائية	٢١٣
214	ELECTRICAL WIREMEN.								كهربائيو أسلاك كهربائية	٢١٤
215	RADIO AND TELEVISION REPAIRMEN.								مختصو تصليح الراديو والتلفزيون	٢١٥
	3. BUILDING TRADES AND WOODWORKERS								حرف البناء والعاملون في الأخشاب	٣-
316	BRICKLAYERS, CONSTRUCTION								بناءون بالطوب (في الانشاءات)	٣١٦
317	PAINTERS, - BUILDINGS.								نقاشو (مباني)	٣١٧
318	PLASTERERS.								عمال بياض (ملبس)	٣١٨
319	CABINET MAKERS, FURNITURE CARPENTERS								نجارو الأثاث	٣١٩
320	CARPENTERS, GENERAL								نجار (عمومي)	٣٢٠
321	WOODEN FURNITURE FINISHERS.								أستورجي	٣٢١
422	4 PRINTERS, - GENERAL								حرف الطباعة (عمومي)	٤- ٤٢٢
	5. OTHER TRADES 3.								الحرف الأخرى	٥-

PLEASE NOTE DOWN TRADES IN YOUR ESTABLISHMENT, NOT MENTIONED ABOVE.

نرجو توضيح المهن والحرف الموجودة لمنشأتكم ولم تذكر أعلاه في ما يلي

3. PLEASE LEAVE CODE NO. COLUMN BLANK, BUT WRITE TRADE NAME IN FULL.

(للعدادين أو الذين يحررون الطلبة نرجو ترك رقم الرمز والعمود بلا كتابة أو علامة ولكن اكتب اسم الحرفة بالكامل لتمييزها فيما بعد)

1. "MECHANICS" MAY INCLUDE :- METAL WORKING MACHINE TOOL MECHANICS; MECHANICS FOR PRINTING, TEXTILE, AGRICULTURAL, PLANT MAINTENANCE MECHANICS (MILL WRIGHTS.), AND OTHER MACHINERY FITTERS AND ASSEMBLERS (SEE MANUAL.).

2. "P – D" PETROL & DIESEL:- 3."UNDER"OTHER TRADES" INCLUDE AND NAME SUCH TRADE SKILLS AS FOUND IN, LEATHER, GLASS, RUBBER, CHEMICAL, TEXTILES, PLASTICS AND FOOD INDUSTRIES, ETC.

PART 1(B): THE NATURE OF THE ESTABLISHMENT

الجزء الأول (ب) : طبيعة المنشأة

CODE NO	TRADES & OCCUPATIONS	Q.2 PRESENT STAFF REQUIRING UPGRADING TRAINING — عدد المستخدمين الذين يحتاجون للتدريب					Q.3 NEED FOR SKILLED WORKERS 1972 — احتياجات العمال المهرة سنة ١٩٧٢ وبعدها		المهن والحرف
		TECHNICIANS فنيون	FOREMEN مشرفون	SKILLED WORKERS عمال مهرة	SEMI-SKILLED عمال شبه مهرة	TOTAL المجموع	PRESENT VACANCIES الوظائف في الحاضر	FUTURE VACANCIES الوظائف في المستقبل	
	1. METAL TRADES								١ - الحرف المعدنية
101	BLACKSMITHS; HAMMERSMITHS.								١٠١ الحدادون وعمال تشغيل المطارق الميكانيكية وكابس الحدادة
102	DIESEL ENGINE MECHANICS (INC. VEHICLE)								١٠٢ ميكانيكو مكنات الديزل (غير العربات)
103	EARTH-MOVING MACHINERY (INC. TRACTOR)								١٠٣ ميكانيكو الات تحريك التربه (بما فيهم ميكانيكو التراكتور)
104	FITTER AND MACHINE TOOL MECHANIC [1]								١٠٤ برادو وميكانيكو الات (عموميون)
105	MACHINE-TOOL OPERATOR - SETTER.								١٠٥ عامل تشغيل ماكنة تشكيل المعادن
106	MOULDERS AND CORE MAKERS.								١٠٦ عمال سباكة المعادن وصنع دليل السباكة (قلب القالب)
107	PLUMBERS AND PIPE FITTERS.								١٠٧ سباكو صحون وبرادو مواسير
108	REFRIGERATION AND AIR-CONDITIONERS								١٠٨ العاملون بالتبريد والمكنفات
109	SHEET-METAL WORKERS.								١٠٩ العاملون بالالواح المعدنية
110	WELDERS AND FLAME CUTTERS.								١١٠ اللحامون وعمال قطع باللهب
111	MOTOR VEHICLE MECHANICS. PETROL.								١١١ ميكانيكو عربات (بنزول و ديزل)
	2. ELECTRIC & ELECTRONIC								٢ - كهرباء والكترونيات
212	VEHICLE ELECTRICIANS.								٢١٢ كهربائيو مركبات
213	ELECTRIC LINEMEN AND CABLE JOINTERS								٢١٣ كهربائيو خطوط وتوصيل كيبلات كهربائية
214	ELECTRICAL WIREMEN.								٢١٤ كهربائيو اسلاك كهربائية
215	RADIO & TELEVISION ENGINEERS.								٢١٥ مختصو تصليح الراديو والتلفزيون
	3. BUILDING TRADES AND WOODWORKERS								٣ - حرف البناء والعاملون في الأخشاب
316	BRICKLAYERS, - CONSTRUCTIONAL.								٣١٦ بنائون بالطوب (في الانشاءات)
317	PAINTERS, - BUILDING.								٣١٧ نقاشو (مباني)
318	PLASTERERS.								٣١٨ عمال بياض (عامون)
319	CABINET MAKERS; FURNITURE CARPENTERS								٣١٩ نجارو الات
320	CARPENTERS, GENERAL.								٣٢٠ نجار (عموميون)
321	WOODEN FURNITURE FINISHERS.								٣٢١ فسترجي
422	**4. PRINTERS, - GENERAL**								٤ - حرف الطباعة (عمومي)
	5. OTHER TRADES								٥ - الحرف الاخرى

1. "FITTER..." - SEE FOOT NOTE PART A.
2. "A": BRANCH ; "B": ...
3. FORESEEABLE VACANCIES 1972 + THAT WILL RESULT FROM INDIVIDUAL DEVELOPMENT (IF ALL CONDITIONS ARE FAVOURABLE) AS FROM NORMAL LOSS OF STAFF.

PART 2 : UPGRADING of EXISTING PERSONNEL

الجزء الثانى : رفع المستويات للمستخدمين الموجودين حاليا

Q.4 هل لديكم كورسات تدريبية لرفع مستويات المستخدمين الموجودين حاليا

HAVE YOU UPGRADING COURSES FOR YOUR EXISTING PERSONNEL? ☐

IF ANSWER IS "2" "No," PLACE A X IN ALL 6 BOXES BELOW.

إذا كانت الاجابة بلا (٢) ضع × فى كل الصناديق الست ادناة

UPGRADING COURSES :- كورسات رفع المستويات

1	2	3	4	5	6
١	٢	٣	٤	٥	٦

IF ANSWER IS "6" (OTHER) GIVE DETAILS :-

إذا كانت الاجابة بالرمز "٦" (اخرى) اذكر التفاصيل

(DETAILS OF "OTHER" COURSES):- .....

تفاصيل الكورسات الاخـــرى .....

.....

.....

.....

.....

Q.5 ARE YOU PREPARED TO INTRODUCE AN INCENTIVE SCHEME TO MOTIVATE YOUR EMPLOYEES TO PARTICIPATE IN UPGRADING COURSES? IF "YES" WHAT INCENTIVES?

هل انتم على استعداد لادخال مشروع الحوافز لتشجيع مستخدميكم للاشتراك فى الكورسات التدريبيه لرفع المستويات ؟ اذا كانت الاجابة بنعم ما هو نوع الحوافز ☐

IF ANSWER IS "2" – "NO", PLACE A "X" IN ALL 4 BOXES BELOW.

اذا كانت الاجابة بلا (٢) ضع العلامة × فى الصناديق الاربعة ادناة

INCENTIVES :- نوع الحوافـــز

1	2	3	4
١	٢	٣	٤

IF ANSWERS IS "4" (OTHER) GIVE DETAILS :- .....

اذا كانت الاجابة بالرمز "٤" اخر اذكر التفاصيل .....

.....

.....

.....

.....

.....

.....

.....

PART 3: TRAINING of NEW PERSONNEL

الجزء الثالث : تدريب المستخدمين الجدد

Q.6 a. PROVIDING ALL ALL CONDITIONS ARE FAVOURABLE, WHICH ONE OF THE FOLLOWING KINDS OF TRAINING PROGRAMMES IS BEST SUITED TO YOUR PRESENT AND NEAR FUTURE NEEDS.

(أ) فى حالة ان الظروف كلها تكون فى صالحك ومشجعة (انظر الشروط ادناة) اشر الى اى من انواع البرامج التدريبه هو الافضل والمناسب لاحتياجاتك الحالية وفى المستقبل القريب

WILL YOU TROVIDE FOR TRAINING OF NEW EMPLOYEES BY هل ستوفر تدريب للموظفين الجدد ؟

(1) IN-PLANT TRAINING..... فى مجال العمل ☐

OR BY (2) OUT-PLANT TRAINING... او خارج مجال العمل ☐

OR BY (3) BOTH METHODS. او بالطريقتين معـا ☐

b. IN WHAT TRADES? AND HOWMANY PEOPLE?

(ب) فى اى الحرف ؟ وكم عدد الاشخاص ؟

GROUP CODE رمز المجموعة	TRADE CODE رمز الحرفة	HOWMANY PEOPLE كم شخص	GROUP CODE رمز المجموعة	TRADE CODE رمز الحرفة	HOWMANY PEOPLE كم شخص
1 ١			7 ٧		
2 ٢			8 ٨		
3 ٣			9 ٩		
4 ٤			10 ١٠		
5 ٥			11 ١١		
6 ٦			12 ١٢		

IF "5" TRADE GROUP (OTHERS) GIVE DETAILS :- NAME OF TRADE AND NUMBERS HERE :-

اذا كانت "٥" رمز المجموعة (الاخرين) ضع التفاصيل لاسم الحرفة والاعداد هنا

TRADE : الحرفة NO. العدد

Q.7 A. WILL YOU RECRUIT NEW PERSONNEL FROM :- هل ستقومون بتعيين مستخدميكم الجدد من :- ☐

1. VOCATIONAL TRAINING CENTRE GRADUATES? ١/ خريجى مركز التدريب المهنى .

2. OTHER SOURCES? NAME THEM :- ٢/ مصادر اخرى (اذكر المصادر) ☐

OTHER SOURCES : ..... مصادر اخرى

B. ARE OUTSIDE SOURCES OF RECRUITMENT KNOWN TO YOU ADEQUATELY MEETING YOUR PLANT'S NEED FOR TRAINED, SKILLED WORKERS? هل المصادر الخارجية للتعيين معروفة لديكم بصفة كافية لتلبية احتياجات مؤسستكم من العمال المهرة والمدربين ؟ ☐

C. LACKING PRACTICAL TRAINING FACILITIES IN YOUR PLANT, WOULD YOU SHARE COST AND PARTICIPATE IN GROUP TRAINING SCHEMES, CONVENIENTLY LOCATED IN YOUR COMMUNITY? ☐

BEST COPY AVAILABLE

PART 4. DETAILS OF APPRENTICESHIPS OR IN PLANT TRAINING

الجزء الرابع : تفاصيل التلمذة الصناعية والتدريب داخل الصناعة

Q.8 PLEASE SHOW THE NUMBER OF LEARNERS OR TRAINEES IN YOUR ESTABLISHMENT. (i.e. ALL LEARNERS NOT IN RECEIPT OF FULL SCALE WAGES NORMALLY PAID TO FULLY TRAINED WORKERS.)

الرجاء ذكر عدد التلامذة الصناعيين او المتدربين فى منشأتكم (وهم كل المتدربين الذين لا يتقاضون الاجر الكامل الذى يمنح عادة للعامل المدرب تدريبا كاملا ٠)

(SEE Q 1. COLUMN E.)

(انظر س (١) العمود هـ)

	OCCUPATION FOR WHICH LEARNERS ARE BEING TRAINED المهنة التى يتدرب عليها المتدربون			INTAKE OF LEARNERS THIS YEAR عدد المقبول من المتدربين هذا العام		EXPECTED OUTPUT THIS YEAR العدد المتوقع ان يكمل التدريب هذا العام		DURATION OF COURSE (MONTHS) الكورس بالشهور		QUALIFICATION FOR TRAINING المؤهلات المطلوبة للتدريب		
	الرقم	الرمز								MINIMUM AGE العمر		MINIMUM EDUCATION الحد الأدنى للتعليم
				TOTAL المجموع		TOTAL المجموع						

REMARKS :- ملاحظات:

Q.9 (ANSWER CODE "YES" = 1; "NO" = 2.) (١) نعم (٢) لا (للاجابة بالرمز)

a DO YOU HAVE A STAFF MEMBER RESPONSIBLE FOR SUPERVISION OF TRAINING?

هل لديكم موظف مختص للاشراف على التدريب ؟ (أ) ☐

b DO YOU HAVE A SYLLABUS OR SCHEME? (COPY AVAILABLE?)

هل هناك مقررات محددة او مشروع لها ؟ (ارفق نسخة ان امكن) (ب) ☐

c DO YOU KEEP PROGRESS RECORDS OF TRAINEES?

هل تحتفظون بسجلات للمتدربين ؟ (ج) ☐

d DO YOU HAVE ANY OTHER PROVISION FOR TRAINING, e.g. RELEASE OF TRAINEES TO ATTEND COURSE AT AN INSTITUTE etc? IF "YES" PLEASE DESCRIBE BRIEFLY.

هل لديكم اى وسائل اخرى للتدريب ؟.......................
مثلا. اخلاء سبيل المستخدمين لحضور كورسات فى التدريب فى معهد .. الخ
اذا كان الاجابة بنعم نرجو وصف ذلك بايجاز (د) ☐

e ANY COMMENTS ON YOUR FUTURE TRAINING NEEDS OR PROBLEMS? WOULD YOU LIKE TO DISCUSS ANY PROBLEM OF SKILLS TRAINING WITH MEMBERS OF THE ILO MANPOWER LABOUR OFFICE OR OF THE ... AND TRAINING ...? (5)

هل لديكم اى تعليقات لاحتياجاتكم التدريب فى المستقبل او اى مشكلات عسيرة ؟ هل تودون مناقشة اى مشكلة تدريب المهارات مع اعضاء منظمة العمل الدولية او مع ادارة القوى العاملة والتدريب ؟ ☐

COMMENTS :- ....
التعليقات ....

ANNEX V

(Reference para. 32)

LETTER

THE DEMOCRATIC REPUBLIC OF THE SUDAN
MINISTRY OF LABOUR
MANPOWER AND TRAINING DEPARTMENT

SURVEY OF INDUSTRIAL VOCATIONAL TRAINING NEEDS

Dear Sir,

The increasing importance of skilled manpower to our country's economic development programme makes it essential to have up-to-date information about the nation's present and future resources of these people. The Ministry of Labour is planning to conduct a skills survey to obtain employment information from employers in the public and private sectors. The data collected will be of considerable value to the Government in framing its educational and vocational training policies.

Your participation in this survey is extremely important to its success, since your organisation is an essential part of the planned survey. A representative of the Ministry of Labour will call on you sometime during the next few weeks to request information from you regarding the number and types of workers you employ. It is hoped that you will extend your co-operation in this work of national importance.

All replies will be kept strictly confidential. They will not be published in any way which would permit identification of any organisation; data will be released only in the form of statistical summaries.

We shall be very grateful for your co-operation.

Sincerely yours,

(signed)

Minister of Labour.

ANNEX VI

(Reference para. 38)

THE DEMOCRATIC REPUBLIC OF THE SUDAN

MINISTRY OF LABOUR
MANPOWER AND TRAINING DEPARTMENT

MANUAL FOR INTERVIEWERS

SURVEY OF INDUSTRIAL VOCATIONAL TRAINING NEEDS

Contents

I. Codes Used in the Questionnaire

Trades and occupations

101. Blacksmith; Hammersmith
102. Diesel Engine Mechanic (non-vehicle)
103. Earth-Moving Machinery (including tractor) Mechanic
104. Fitter and Machinery Mechanic (General)
105. Machine Tool Operator-Setter
106. Moulder and Core Maker
107. Plumber and Pipe Fitter
108. Refrigeration and Air-Conditioning Installer/ Mechanic
109. Sheet-Metal Worker
110. Welder and Flame Cutter
111. Motor Vehicle Mechanic, Petrol or Diesel
112. Vehicle Electrician
113. Electric Lineman and Cable Jointer *
114. Electrician Wireman
115. Radio and Television Repairman
116. Bricklayer (Construction)
117. Painter (Buildings)
118. Plasterer
119. * Cabinet Maker (Furniture Carpenter)
120. Carpenter (General)
121. Wooden Furniture Finisher
122. * Printer (General)

Provinces

201. Khartoum
202. Blue Nile
203. Kordofan
204. Darfur
205. Kassala
206. Northern
207. Upper Nile
208. Equatoria
209. Bahr El Ghazal

Answers (where "yes" or "no")

1. Yes
2. No

Towns[1]

301. Khartoum
302. Khartoum North
303. Omdurman
304. Wad Medani
305. Atbara
306. El Obeid
307. Port Sudan
308. Kassala
309. Wau
310. Juba
311. Malakal
312. El Fashier
313. New Halfa
314. Kosti
315. Nyala

Industrial group

401. Metal Trades
402. Electric and Electronic
403. Building Construction
404. Printing
405. Others

Size of establishment (No. of full-time paid workers)

501. 5-9
502. 10-29
503. 30-49
504. 50-99
505. 100-499
506. 500 and over

Sector

601. Public
602. Private

* But Code Nos. 212-5, 316-21 and 422 are used in questionnaire.

---

[1]

II. Definition of Terms Used in the Survey

1. Technician

A person who occupies a position between that of the qualified scientist, engineer or technologist on the one hand, and the skilled worker or craftsman on the other. His education and training are likely to have taken him at least up to the end of secondary education, in a general or technical course; he may have had post-secondary level training and hold a corresponding degree or diploma.

His functions may include some of the following: detailed design and development or the manufacture, erection or commissioning of equipment and structures; drawing, inspecting and testing equipment; use of complex measuring instruments; trouble diagnosis and process control; customer service; work study, costing and estimating; assistance to qualified scientists (collection and evaluation of experimental observations, preparation of biological cultures or similar preparation in other fields, testing of product samples, chemical analysis, etc.).

2. Foreman or Supervisor

One who provides supervision, control and/or guidance to skilled craftsmen, semi-skilled craftsmen and operatives who may compose a working unit in the factory. He is usually a fully skilled craftsman or technician. He performs certain administrative tasks which are necessary to the operation and control of a particular unit or section. His functions often include planning the work and giving instruction on the job.

3. Skilled Worker

A person who has acquired the full qualifications required for the performance of a recognised trade or other occupation. He will know how to do a variety of operations, how to set up the machinery or prepare the material for the work, and also how to make the repairs or adjustments necessary to maintain the machinery or the flow of work.

Skilled workers can occupy jobs which normally demand a training level equivalent to the completion of apprenticeship, or at least one or two years (600 to 1,200 instruction hours) of vocational training, or the equivalent in adult education, or actual work experience.

4. Semi-Skilled Worker

A person who has been trained to perform a limited number of skilled functions or operations, but who has not the all round technical skills and knowledge required for a recognised trade or other occupation.

Semi-skilled workers can occupy jobs which require only a short training period, generally 3 to 6 months (150 to 300 instruction hours), or the equivalent in work experience. Semi-skilled workers may perform skilled operations on a repetitive basis, but will lack the over-all knowledge of the skilled worker necessary either to set up the machinery or to make the necessary repairs for maintenance.

5. Apprentice

An entry worker who holds an apprenticeship contract registered with the Ministry of Labour, he is usually between the ages of 15 and 20 years, and receives full-time training in trade skills and knowledge, substantially carried out within an undertaking or in a vocational training centre combined with on-the-job training, totalling approximately 3 years.

The Sudan Unified Labour Code 1970 states that the definition includes whoever has executed a contract with an employer for the purpose of learning a trade or occupation is an apprentice (Chapter II, Section I, Clause 14. i.).

6. Upgrading

Training for supplementary skills and knowledge in order to increase the versatility and occupational mobility of a worker or to improve his standard of performance. It may, but will not necessarily, lead to promotion.

This training often takes the form of intense short courses (of 100-200 hours) of either part or full-time attendance, and they usually give specialised, advanced or updating training in practical skills or knowledge.

III. Classification[1] of the Twenty-Two Occupations Surveyed

101. 8-31.10/20. Blacksmith, Hammersmith

Forges and repairs articles of iron and steel, such as hand tools, hooks, chains, agricultural implements and metal structural parts, using hand or power hammers: selects metal and heats it in a small furnace; places metal on anvil and shapes it by hammering, cutting and punching: hammersmith shapes heated metal into forgings on power hammer equipped with open dies.

102. 8-49.20. Diesel Engine Mechanic (Non-Vehicle)

Specialises in adjusting, repairing and servicing diesel engines which drive generators, pumps and other stationary equipment, railway locomotives, construction machinery and other mobile equipment, except motor vehicles.

103. 8-49.60. Earth-Moving Equipment and Machinery Mechanic

Specialises in servicing, adjusting and repairing earth-moving and construction machinery such as mechanical shovels, bulldozers, excavators and levellers.

104. 8-41.05. Fitter and 8-49.10. Machinery Mechanic (General)

Makes completely parts and subassemblies of machinery and related equipment, according to specifications or by reproducing original components, using machine tools, and fits, assembles and repairs machine parts. The machinery mechanic services and repairs various types of machinery, engines and equipment; examines faulty machinery, dismantles to remove damaged or worn parts; repairs parts and tests reassembled equipment. Note: interviewers can also record against Code 104 the following two occupations and make a note of this at foot of page.

8-49.55. Agricultural Machinery Mechanic

Services and repairs agricultural machinery; specialises in servicing, adjusting and repairing agricultural machines such as cultivating, planting, reaping, threshing and baling machines.

8-49.70. Plant Maintenance Mechanic (Millwright)

Performs tasks similar to those of machinery mechanic (general) but specialises in repairing and maintaining installed machinery, plumbing and mechanical structures of an industrial or other establishment.

---

[1] International Standard Classification of Occupations (ISCO), ILO 1968 is basis.

105. 8-34.10. Machine Tool Operator, Setter

Operates various types of automatic or semi-automatic power driven metal-cutting, boring and grinding machines which have been set up for repetitive work, e.g. lathes, milling, planing, drilling and metal sawing machines.

106. 7-25.20/30-90. Metal Moulder and Coremaker

Makes sand moulds and cores for metal castings, making sand moulds by hand on a bench for small metal castings, or on a foundry floor for large metal castings.

107. 8-71.05/10. Plumber and Pipe Fitter

Assembles, installs and maintains pipes, fittings and fixtures of drainage, heating, water supply and sanitary systems. The pipefitter specialises in assembling, installing and maintaining high-pressure and low-pressure systems and metal pipes, or combined metal and non-metal pipes, for conducting air, gas, steam, oil, water and other fluids. Repairs leaks and joints.

108. 8-41.80. Refrigeration and Air-Conditioning Installer/ Mechanic

Installs and repairs industrial, commercial and domestic refrigeration and cooling systems.

109. 8-73.10. Sheet Metal Worker (General)

Makes, installs and repairs a variety of sheet metal articles by hand and machine. May use sheet steel, copper, tin, zinc, etc. Makes and repairs household articles in tin-plate; repairs tanks, boilers and vats. Shapes metal by bending, rivetting, brazing and soldering.

110. 8-72. Welder and Flame Cutter

Workers in this group join and cut metal parts, using flame, electric arc and other sources of heat to melt and cut, or to melt and fuse metal. Their functions include: welding metal parts; using blow torch to make and repair lead linings, pipes, floors and other lead fixtures: brazing metal parts together; cutting metal by means of gas flame and electric arc.

111. 8-43.20/30. Motor Vehicle Mechanic (Petrol or Diesel)

Repairs, services and overhauls automobiles and similar motor vehicles, examining, dismantling, replacing defective parts; adjusts motors, brakes, steering and other parts of motor vehicles; may do body repairs and spray painting. The diesel vehicle mechanic specialises in repairing, servicing and overhauling diesel automobile engines.

112. 8-55.40. Vehicle Electrician

Installs and repairs electrical wiring and other electrical equipment in vehicles, such as trains, trams and motor vehicles; repairs and adjusts generators, starter motors and ignition systems of motor vehicles.

113. 8-57. Electric Lineman and Cable Jointer

Workers in this group construct, install and repair electrical lines and join cables. Their functions may include installing and repairing overhead electric power and electric traction lines; telephone and telegraph lines (including underground lines); making joints in surface and underground cables; maintaining electric power lines.

114. 8-55.10. Electrical Wireman

Installs, maintains and repairs electrical wiring and related equipment in buildings and other structures. Positions and fixes fuse boxes, switches and light and power points; connects wiring to sources of electricity supply; tests for defects; repairs electric wiring in buildings.

115. 8-54.20. Radio and Television Repairman

Repairs radio and television receivers in workshop or place of use. Uses special testing equipment to discover faults; repairs or replaces faulty parts; renews wiring; tests and adjusts receivers.

116. 9-51.20. Bricklayer (Construction)

Lays bricks, hollow tiles and similar building blocks (except stone) to construct walls, partitions, arches, interior fireplaces and chimneys and other structures. May fix brick veneer to face a masonry structure, for ornamental brickwork designs, and alter and repair existing brickwork.

117. 9-31.20. Painter (Buildings)

Applies coats of paint, varnish, shellac and similar materials, to exterior and interior surfaces, trimmings and fixtures of buildings to protect and decorate them. May paint fixtures, fittings, fences, etc.; may hang wallpaper.

118. 9-55.10. Plasterer (General)

Applies one or more coats of plaster to walls and ceilings of buildings to produce a finished surface. Supplies first, second and finishing coats - also plasters outside surfaces of buildings; may specialise as ornamental, stucco or fibrous plasterer.

119. 8-11.20. Cabinet Maker (Furniture Carpenter)

Makes completely and repairs wooden articles such as cabinets and furniture using woodworking machines and tools; repairs and refashions high grade articles of furniture. May make sketches or drawings of work to be done.

120. 9-54.10. Carpenter (General)

Cuts out, assembles, erects and repairs structural and other woodwork at work bench and on construction site. Selects wood to be used, cuts and shapes wood by hand or machine tools, by sawing, planing, sanding; assembles wooden parts, using glue, screws, nails; erects and repairs rafters, wooden floors, partitions, windows, door frames. Construction carpenter performs similar tasks, but specialises in on-site carpentry and may make wooden shuttering for concrete work.

121. 9-21.10. Printer (General)

Workers in this group compose, type, cast printing plates, and operate printing presses; includes compositor lino-type operator, etc. Note that 8-49.40 Printing Machinery Mechanic can be recorded under Code 104 above.

IV. Instructions for completing the Questionnaire

A. General

1. The questionnaire is to be completed in English.

2. Supervisory staff should make certain that the identification information asked for on front cover is filled in before the schedules leave the office (with possible exception of VII and IX). Fill in P.O. box and telephone number for each Ministry of Labour regional office.

3. It should again be emphasised that all information supplied will be treated as confidential and used for statistical or research purposes only.

4. Always use only ONE figure for each column or square, e.g. if minimum age (Q.8) is 15 years, record it: 1 | 5

5. When using CODE boxes, always fill in code numbers MOST carefully and clearly and put an X in any unused space.

6. After filling in as much of the questionnaire as can be accurately completed, it may be necessary to leave the schedule with the person supplying the information until he can produce reliable figures for the remainder of the questions. Always agree upon an early date for completion and collection.

7. Where establishments have branches, information for the branches will be collected at the branches.

8. Please do not overstate the description of an occupation. For example, do not describe a motor vehicle mechanic as an engineer.

9. Ask all questions of all respondents.

10. Do not change the wording of any question, but always ask them exactly as printed. Take for example the question Q.2 - "Present staff requiring upgrading training". Now consider the following variations of this wording:

- "What is the number of your present staff requiring training?" (The all-important word "upgrading" omitted).
- "You don't have any staff requiring upgrading training, do you?" (Question completely changed and inviting a negative answer).

11. Note under the heading of Trades and Occupations pertaining to section 5 - Other Trades, in both Q.1 and Q.2, write down the name of trades or occupations, but do NOT give a code number. If possible, secure a brief description of such trades and related training problems, e.g. method of training, supply position and turnover.

B. Instructions and Guidance on Q.1 to Q.9

Q.1 Study carefully the various definitions of skill levels given in this manual. In the Trainees or Learners column include apprentices and all other learners receiving basic training; they must be on the payroll, even if they receive only a fraction of the wages earned by a fully trained worker. In the Annual Turnover column, give TOTAL average loss or withdrawal of staff from columns A, B, C, D and E.

Q.2 In most industries, no matter how small or how large, there is definite need for the upgrading of the skills of a large percentage of those engaged, if an improvement in the standard of production, both in quantity and in quality, is to be achieved. Only rarely should management be satisfied that no improvement is possible, perfection being difficult to accomplish. Only rarely, therefore, should Q.2 produce a nil return. It is of primary importance that the collated answers supplied to this question reflect the true needs of the country for raising of the over-all standards in the skilled trades.

Q.3 This is another important question for which enumerators are expected to secure some positive response. There may be very few present vacancies, but some estimate of expected or foreseeable future vacancies or requirements should be supplied for approximately the next few (say two to five) years. It should be explained to respondents that what is wanted here is a reasonable, if somewhat subjective estimate of their possible future needs that will result not only from the normal turnover or loss of staff but also will result from their industrial development, if all conditions prove to be favourable in the foreseeable future, i.e. if management could be helped to secure the necessary finance, land, raw materials and staff necessary for planned expansion over the next five years or so. (Note the influence of the Five-Year Plan for Economic and Social Development).

Q.4 Ways by which employees may be upgraded are by the firm:

(1) introducing its own training courses;

(2) developing courses with other agencies - which?;

(3) developing courses with the National Vocational Training Scheme;

(4) supplying correspondence courses;

(5) sending employees for training to other countries;

(6) other ways (name them).

N.B. If answer is NO (2) in upper box, place X in all six lower boxes.

Q.5 Possible incentives for employees to take upgrading courses are:

(1) increased wages for course graduates;

(2) upgraded trained staff given positions of greater responsibility;

(3) employer releasing trainees part-time for course participation;

(4) other ways (name them).

N.B. If answer is NO (2) in upper box, place X in all four lower boxes.

Q.6 The forecasts under headings A and B are wanted in case government help can be given. Give forecasts of what could be done if the Government were to make land available or provide other necessary assistance for desired expansion. Answers based upon present staff turnover rate and any expected development during next five years should be possible.

Q.7 Under heading A, other sources for recruiting new personnel could be:

- from secondary technical schools;
- from employment exchanges;
- from elementary school leavers.

Under headings B and C, interviewers should make sure that respondents are aware of the relevant regulations regarding vocational training embodied in the Ministry of Labour's Unified Labour Code 1970.

Q.8 Although learners or trainees may not be in receipt of full wages, they must be receiving some wage and are therefore officially on the payroll of the establishment.

Q.9 Against 9a. The person <u>responsible for supervision</u> of training may be a staff member or he may be the owner or manager of the firm, especially if the firm is a small one; if so, the answer to this section would be YES.

Against 9b. If there is a syllabus or scheme of training, please ask if it would be possible to have a copy.

Against 9c. Comments on any topic relevant to training needs will be welcome, and could be continued on an extra page.

V. Extracts from Unified Labour Code 1970[1]

CHAPTER II	TO PREPARE FOR A VOCATION
Section I	Apprenticeship
Clause 14(i)	Apprenticeship contracts. Whoever has executed a contract with an employer for the purpose of learning a trade or occupation is an apprentice.
Clause 15	Sets out requirements of apprenticeship contract.
Section II	Vocational training
Clause 20	Definition: vocational training means methods and theoretical and practical programmes prepared with a view to enable workmen to develop their skills and knowledge in order to increase the standard of their productivity or to prepare them for specific occupations or to enable them to be more mobile, from one occupation to another. This training shall be organised in the establishments or in special centres set up for the purpose.
Clause 21(i)	The Minister of Labour in consultation with the Manpower and Training Council shall prescribe conditions and arrangements to be followed in vocational training concerning the people's (trainees) pre-employment or in-service training and the arrangements for the training of instructors.
Clause 21(ii)	The Minister of Labour in consultation with the Manpower and Training Council shall prescribe for every trade the minimum and maximum period of training, stages, qualifications, experience required for each type, methods, theoretical and practical programmes, etc.
Clause 21(iii)	The Minister of Labour in agreement with the Minister concerned shall prescribe the different responsibilities for the establishments undertaking the training, and methods for calculating data and statistics necessary regarding training.

---

[1] Not in force as of February 1971, but reflects government thinking on vocational training.

Clause 22(i) Vocational training centres should be established in all the public sector's establishments specified by the Minister of Labour in consultation with the Manpower and Training Council and in agreement with the Minister concerned for the purpose of increasing the standard of productivity of workmen and to enable the establishments to meet their requirements of skilled manpower.

Clause 22(ii) The head or the director of the said establishment shall be responsible for the administration and development of the training programmes, and for the making of rules in such a way as to ensure proper incentives for training.

Clause 23(i) The establishments in the private sector specified by the Ministry of Labour in consultation with the Manpower and Training Council shall provide its workmen with training materials and programmes referred to in clause 21 of this Code, in order to increase the respective vocational, managerial and supervising standards. The said establishments shall furnish information to the administrative authority concerned periodically, about the said programmes and all action taken for satisfying the needs for the trained skilled manpower.

Clause 23(ii) If the establishment does not fulfil its obligations specified in subclause (i) above, the Minister of Labour shall nominate the centre or agencies for giving training to the employees of the establishment and the establishment is obliged to pay the training expenses.

Clause 24(i) Continuation of payment of wages to the trainees during training.

Clause 24(ii) The establishment should establish a department to supervise the training affairs, and the trainees shall be subject to control and supervision of the said training department or section.

Clause 25(i) The trained worker who has been trained by the establishment is obliged to continue to work for the period specified by the Minister of Labour.

Clause 25(ii) If the trained worker does not fulfil the obligations mentioned above, the establishment concerned has a right to get reimbursed the appropriate cost of training from the trainees concerned.

ANNEX VII

(Reference para. 40)

CODIFIED CLASSIFICATION OF THE 533 ESTABLISHMENTS SURVEYED ACCORDING TO PROVINCE, TOWN, TRADE, GROUP, SIZE, AND SECTOR

THIS SURVEY COVERED ALL ESTABLISHMENTS
HAVING FIVE OR MORE EMPLOYEES,
IN FOUR MAIN TRADE GROUPS OF METAL TRADES
(INCLUDING AUTOMOTIVE),
ELECTRIC AND ELECTRONIC,
BUILDING CONSTRUCTION AND PRINTING

Note: Coding key is given in Part I of the Manual for Interviewers in Annex 5.

I. Summary of Establishments by Provinces and Towns

	Establishments in the Public Sector	Establishments in the Private Sector	Total
A. By Provinces			
201 Khartoum	48	159	207
202 Blue Nile	47	66	113
203 Kordofan	6	16	22
204 Darfur	5	13	18
205 Kassala	22	88	110
206 Northern	12	3	15
207 Upper Nile	6	8	14
208 Equatoria	9	7	16
209 Bahr El Ghazal	10	8	18
TOTALS	165	368	533
B. By Towns			
301 Khartoum	33	91	124
302 Khartoum North	9	33	42
303 Omdurman	6	35	41
304 Wad Medani	16	20	36
305 Atbara	12	3	15
306 El Obeid	6	16	22
307 Port Sudan	14	72	86
308 Kassala	4	6	10
309 Wau	10	8	18
310 Juba	9	7	16
311 Malakal	6	8	14
312 El Fashier	4	3	7
313 New Halfa	4	10	14
314 Kosti	12	24	36
315 Nyala	1	10	11
316 El Hasaheisa	9	17	26
317 Sennar	10	5	15
TOTALS	165	368	533

II. Table of Establishments Classified According to Province, Town, Sector, and (by Code) Establishment Code Number (ECN), Trade Group, and Size

ECN	TRADE	SIZE	ECN	TRADE	SIZE
KHARTOUM PROVINCE			KHARTOUM		
PUBLIC					
0002	401	505	0011	401	501
0004	401	506	0012	401	501
0009	401	505	0013	401	501
0027	401	504	0014	401	501
0029	401	504	0015	401	502
0030	401	504	0016	401	501
0034	401	506	0017	401	502
0046	401	504	0018	401	501
0048	401	504	0019	401	501
0054	401	505	0020	401	502
0057	401	504	0021	401	501
0060	401	506	0022	401	501
0062	401	504	0023	401	502
0063	401	504	0024	401	501
0064	401	503	0025	401	501
0065	401	502	0026	401	501
0075	402	506	0028	401	501
0077	402	502	0031	401	502
0079	402	504	0032	401	502
0084	403	506	0033	401	501
0085	403	505	0035	401	501
0086	403	505	0036	401	501
0088	403	506	0037	401	501
0094	403	505	0038	401	502
0101	403	505	0039	401	501
0104	404	505	0040	401	502
0105	404	504	0041	401	501
0106	404	503	0042	401	502
0120	404	504	0043	404	502
0121	402	506	0044	401	503
0122	401	506	0045	404	505
0123	401	506	0047	401	502
0124	401	506	0049	401	501
			0050	401	501
PRIVATE			0051	401	502
			0052	401	504
0001	401	501	0053	401	502
0003	404	501	0055	401	501
0005	404	502	0056	403	501
0006	401	504	0058	401	501
0007	401	501	0059	401	502
0008	401	502	0061	401	504
0010	401	501	0066	401	502

ECN	TRADE	SIZE	ECN	TRADE	SIZE
PRIVATE					
0067	401	502	0096	403	501
0068	401	501	0097	402	502
0069	401	502	0098	402	501
0070	402	502	0099	403	502
0071	401	502	0100	403	501
0072	401	502	0102	403	503
0073	401	501	0103	403	501
0074	402	501	0107	404	501
0076	401	502	0108	404	502
0078	403	501	0109	404	501
0080	404	501	0110	404	502
0081	402	502	0111	404	504
0082	402	501	0112	404	501
0083	402	502	0113	404	504
0087	403	501	0114	404	502
0089	403	501	0115	404	501
0090	403	501	0116	404	501
0091	401	502	0117	404	501
0092	403	502	0118	404	501
0093	403	501	0119	404	502
0095	402	501			
KHARTOUM PROVINCE			**KHARTOUM NORTH**		
PUBLIC					
0201	403	506	0214	402	502
0206	404	505	0215	401	504
0218	401	503	0216	403	503
0219	401	504	0217	404	505
0220	404	504	0221	404	504
0234	401	505	0222	403	501
0235	401	502	0223	401	502
0236	401	506	0224	401	501
0241	401	506	0225	401	501
			0226	402	502
PRIVATE			0227	403	502
			0228	401	502
0202	401	502	0229	401	502
0203	401	504	0230	401	502
0204	401	504	0231	401	501
0205	401	505	0232	401	501
0207	401	501	0233	404	505
0208	401	503	0237	401	506
0209	402	503	0238	401	503
0210	401	504	0239	404	504
0211	401	503	0240	404	501
0212	401	501	0242	401	505
0213	403	501			

ECN	TRADE	SIZE	ECN	TRADE	SIZE
KHARTOUM PROVINCE			OMDURMAN		
PUBLIC					
0306	401	506	0316	401	502
0311	402	504	0317	401	502
0324	402	505	0318	401	504
0327	402	505	0319	401	501
0335	403	502	0320	401	501
0336	402	502	0321	401	501
			0322	401	501
PRIVATE			0323	401	501
			0325	401	501
0301	403	504	0326	401	501
0302	403	504	0328	401	501
0303	403	504	0329	401	501
0304	403	502	0330	401	501
0305	403	502	0331	401	502
0307	401	501	0332	401	501
0308	401	503	0333	401	502
0309	401	504	0334	402	501
0310	404	502	0337	401	501
0312	401	501	0338	403	501
0313	401	501	0339	403	501
0314	404	504	0340	403	501
0315	401	501	0341	401	502
BLUE NILE PROVINCE			WAD MEDANI		
PUBLIC					
0409	401	504	0404	401	501
0410	401	503	0405	401	502
0411	401	506	0406	401	501
0412	401	505	0407	401	501
0412	401	505	0408	401	502
0413	401	506	0417	401	501
0414	401	506	0422	401	501
0415	401	505	0423	401	501
0416	401	506	0424	401	502
0418	402	504	0426	403	501
0419	402	505	0427	403	502
0420	401	505	0428	403	501
0421	401	503	0429	403	501
0425	402	505	0432	404	502
0430	403	505	0433	404	502
0431	403	506	0435	401	503
0434	401	506	0436	401	501
PRIVATE					
0401	401	502			
0402	401	502			
0403	401	501			

ECN	TRADE	SIZE
NORTHERN PROVINCE		
PUBLIC		
0501	401	506
0502	401	506
0503	401	506
0504	401	506
0505	401	506
0506	401	506
0507	401	504
0509	402	505
KORDOFAN PROVINCE		
PUBLIC		
0601	401	506
0602	401	505
0612	402	505
0613	403	506
0615	403	506
0622	403	504
PRIVATE		
0603	401	501
0604	401	502
0605	401	502
0606	401	502
KASSALA PROVINCE		
PUBLIC		
0701	401	501
0737	401	504
0739	401	503
0740	401	503
0741	401	504
0742	401	506
0743	401	504
0744	401	505
0746	401	506
0747	401	504
0756	402	505
0757	402	506
0758	402	506
0778	403	506
PRIVATE		
0702	401	501
0703	401	501

ECN	TRADE	SIZE
ATBARA		
0510	402	506
0511	403	506
0512	403	506
0514	404	502
PRIVATE		
0508	401	501
0513	403	501
0515	404	502
EL OBEID		
0607	401	501
0608	401	501
0609	401	502
0610	401	502
0611	401	502
0614	403	501
0616	403	501
0617	403	501
0618	403	501
0619	403	502
0620	404	501
0621	404	502
PORT SUDAN		
0704	401	502
0705	401	501
0706	401	502
0707	401	501
0708	401	501
0709	401	501
0710	401	501
0711	401	501
0712	401	502
0713	401	501
0714	401	501
0715	401	501
0716	401	501
0717	401	501
0718	401	501
0719	401	501
0720	401	501
0721	401	501

ECN	TRADE	SIZE	ECN	TRADE	SIZE
0722	401	501	0760	402	503
0723	401	501	0761	403	502
0724	401	501	0762	403	501
0725	401	501	0763	403	501
0726	401	501	0764	403	502
0727	401	501	0765	403	501
0728	401	501	0766	403	501
0729	401	501	0767	403	501
0730	401	501	0768	403	501
0731	401	501	0769	403	501
0732	401	501	0770	403	502
0733	401	501	0771	403	501
0734	401	501	0772	403	501
0735	401	502	0773	403	501
0736	401	502	0774	403	501
0738	401	501	0775	403	502
0745	401	505	0776	403	504
0748	401	504	0777	403	501
0749	401	503	0779	403	502
0750	401	504	0780	403	502
0751	401	505	0781	403	502
0752	401	505	0782	403	503
0753	402	501	0783	403	502
0754	402	501	0784	404	502
0755	402	502	0785	404	502
0759	402	502	0786	404	502

KASSALA PROVINCE

KASSALA

PUBLIC

PRIVATE

0801	401	504	0802	401	501
0805	401	506	0803	401	501
0807	402	505	0804	401	501
0808	403	505	0806	401	501
			0809	403	501
			0810	404	502

BAHR EL GHAZAL PROVINCE

WAU

PUBLIC

PRIVATE

0905	401	506	0901	401	501
0907	401	504	0902	401	501
0908	401	505	0903	401	501
0909	402	504	0904	401	501
0910	402	504	0906	401	501
0912	403	505	0911	403	502
0915	403	506	0913	403	502
0916	403	505	0914	403	501
0917	403	504			
0918	403	505			

ECN	TRADE	SIZE
EQUATORIAL PROVINCE		
PUBLIC		
1008	401	503
1009	401	505
1010	401	505
1011	402	503
1012	402	502
1013	402	504
1014	403	506
1015	403	503
1016	404	503
UPPER NILE PROVINCE		
PUBLIC		
1102	401	504
1105	401	502
1107	402	505
1108	402	503
1109	402	504
1110	403	506
DARFUR PROVINCE		
PUBLIC		
1204	402	505
1205	403	506
1206	401	505
1207	401	504
KASSALA PROVINCE		
PUBLIC		
1301	401	504
1311	402	506
1312	402	505
1314	403	505
PRIVATE		
1302	401	502
1303	401	501
1304	401	501
1305	401	501
1306	401	501

ECN	TRADE	SIZE
JUBA		
PRIVATE		
1001	401	501
1002	401	501
1003	401	501
1004	401	501
1005	401	502
1006	401	501
1007	401	502
MALAKAL TOWN		
PRIVATE		
1101	401	504
1103	401	506
1104	401	502
1106	401	501
1111	403	502
1112	403	502
1113	403	502
1114	403	501
EL FASHIER		
PRIVATE		
1201	401	501
1202	401	501
1203	401	501
NEW HALFA		
1307	401	501
1308	401	501
1309	401	501
1310	401	501
1313	402	501

ECN	TRADE	SIZE
BLUE NILE PROVINCE		
PUBLIC		
1401	401	505
1402	401	505
1403	401	505
1404	401	505
1405	401	505
1429	402	505
1430	402	503
1431	403	505
1432	403	502
1433	403	502
1435	401	506
1436	401	505
PRIVATE		
1406	401	504
1407	401	504
1408	401	502
1409	401	502
1411	401	502
DARFUR PROVINCE		
PUBLIC		
1501	401	506
PRIVATE		
1502	401	502
1503	401	502
1504	401	501
1505	401	501
1506	401	501

ECN	TRADE	SIZE
KOSTI		
1412	401	502
1413	401	502
1414	401	502
1415	401	502
1416	401	502
1417	401	502
1418	401	501
1419	401	501
1420	401	501
1421	401	501
1422	401	501
1423	401	501
1424	401	501
1425	401	501
1426	401	501
1427	401	501
1428	401	501
1434	403	501
NYALA		
1507	401	501
1508	401	501
1509	401	501
1510	403	501
1511	404	501

ECN	TRADE	SIZE
BLUE NILE PROVINCE		
PUBLIC		
1601	401	506
1602	401	506
1603	401	505
1612	401	501
1620	402	505
1621	402	504
1622	402	503
1623	403	505
1624	403	502
PRIVATE		
1604	401	502
1605	401	503
1606	401	502
1607	401	502
BLUE NILE PROVINCE		
PUBLIC		
1701	401	506
1702	401	505
1703	401	505
1705	401	504
1706	401	503
1707	401	502
1712	402	505
1713	402	505
1714	402	504
1715	403	503

ECN	TRADE	SIZE
EL HASAHEISA TOWN		
1608	401	502
1609	401	502
1610	401	502
1611	401	502
1613	401	501
1614	401	501
1615	401	501
1616	401	501
1617	401	501
1618	401	501
1619	401	501
1625	403	501
1626	404	501
SENNAR		
PRIVATE		
1704	401	504
1708	401	501
1709	401	501
1710	401	501
1711	401	501

ANNEX VIII

(Reference para. 41)

NUMBER OF FULL-TIME PAID EMPLOYEES BY PROVINCE AND SECTOR

(in descending order of magnitude)

No.	Province	Total No. of workers	Public sector	Private sector
1	Khartoum	47 592	42 019	5 573
2	Blue Nile	20 191	19 350	841
3	Northern	18 875	18 850	25
4	Kassala	8 548	6 744	1 804
5	Kordofan	2 851	2 683	168
6	Bahr El Ghazal	2 626	2 561	65
7	Darfur	2 313	2 215	98
8	Upper Nile	1 489	878	611
9	Equatoria	1 461	1 402	59
	TOTAL	105 946	96 702	9 244

ANNEX IX

(Reference para. 41)

DISTRIBUTION OF ESTABLISHMENTS SURVEYED, BY TOWNS AND FOUR MAIN TRADE GROUPS

No.	Towns	Metal trades	Electric and electronic	Building and woodworking	Printing	TOTAL	Public sector	Private sector
1	Khartoum	72	12	18	22	124	33	91
2	Kh. North	28	3	4	7	42	9	33
3	Omdurman	25	5	9	2	41	6	35
4	W. Medani	25	3	6	2	36	16	20
5	Atbara	8	2	3	2	15	12	3
6	El Obeid	11	1	8	2	22	6	16
7	P. Sudan	52	8	23	3	86	14	72
8	Kassala	6	1	2	1	10	4	6
9	Wau	8	2	8	-	18	10	8
10	Juba	10	3	2	1	16	9	7
11	Malakal	6	3	5	-	14	6	8
12	El Fashier	5	1	1	-	7	4	3
13	New Halfa	10	3	1	-	14	4	10
14	Kosti	30	2	4	-	36	12	24
15	Nyala	9	-	1	1	11	1	10
16	El Hasaheisa	19	3	3	1	26	9	17
17	Sennar	11	3	1	-	15	10	5
	TOTAL	335	55	99	44	535	165	368
	Percentage	63	10	19	8	100	31	69

ANNEX X

(Reference para. 41)

NUMBER OF EMPLOYEES IN EACH OCCUPATION BY SKILL LEVEL (OR CATEGORY)

No.	Trades and occupations	Technicians	Foremen	Skilled workers	Semi-sk workers	Trainees	Total
	Metal trades						
1	Blacksmith, hammersmith	4	137	711	776	346	1 974
2	Diesel engine mechanic (non-veh)	47	172	1 113	1 032	360	2 724
3	Earth-moving machy (incl tract) mech	24	38	383	585	26	1 056
4	Fitter and machinery mechanic	45	206	1 888	1 214	353	3 706
5	Machine tool operator/setter	10	52	633	385	172	1 252
6	Moulder and coremaker	5	12	290	90	24	421
7	Plumber and pipe fitter	44	45	378	594	42	1 103
8	Refrig and air cond instalr/mech	7	10	34	40	6	97
9	Sheet metal worker	-	16	170	246	29	461
10	Welder and flame cutter	3	21	362	225	38	649
11	Motor vehicle mechanic (P or D)	39	238	1 416	1 447	995	4 095
	Electric and electronic						
12	Vehicle electrician	7	20	280	299	73	579
13	Electric lineman and cable jointer	150	130	700	1 232	139	2 351
14	Electrical wireman	68	103	731	468	92	1 462
15	Radio and television repairman	200	19	47	62	13	341

No.	Trades and occupations	Technicians	Foremen	Skilled workers	Semi-sk workers	Trainees	Total
	Building and woodworking						
16	Bricklayer (construction)	86	161	818	595	193	1 853
17	Painter (buildings)	-	13	237	392	8	650
18	Plasterer	-	2	8	29	-	39
19	Cabinet maker (furniture carpenter)	106	353	478	555	208	1 700
20	Carpenter (general)	31	124	1 329	920	287	2 691
21	Wooden furniture finisher	1	5	66	175	8	255
	Printing						
22	Printer (general)	35	86	550	435	247	1 353
	TOTAL	912	1 963	12 622	11 686	3 619	30 802

ANNEX XI

(Reference para. 41)

ANNUAL TURNOVER ACCORDING TO OCCUPATION AND PROVINCE

No.	Trades and Occupations	Khrt	Blue Nile	Kord-ofan	Dar-fur	Kass-ala	North	Uppr Nile	Equat	BE Ghaz	Total No.	%
	Metal Trades											
1	Blacksmith; hammersmith	169	38	10	11	25	-	2	8	1	264	13
2	Diesel engine mechanic (non-veh)	1	15	-	-	4	-	-	-	-	20	1
3	Earthmoving mach (incl tract) mech	4	15	-	-	-	-	-	-	-	19	2
4	Fitter and machinery mechanic	30	7	-	-	9	-	-	-	-	46	1
5	Machine tool operator-setter	15	48	2	-	2	2	-	-	-	69	6
6	Moulder and core-maker	4	-	-	-	-	-	-	-	-	4	1
7	Plumber and pipe fitter	7	4	-	-	-	-	-	-	-	11	1
8	Refrig and air cond instalr/mech	5	-	-	-	2	-	-	-	-	7	7
9	Sheet metal worker	68	-	-	-	1	1	-	-	4	74	16
10	Welder and flame cutter	10	-	-	-	3	-	-	-	-	13	2
11	Motor vehicle mechanic	91	37	15	19	26	-	5	3	8	204	2
	Electric and Electronic											
12	Vehicle electrician	10	-	-	-	2	-	-	-	-	12	2
13	Electric lineman and cable jointer	-	18	-	-	6	-	-	-	-	24	1
14	Electrical wireman	3	4	-	-	-	-	-	-	-	7	0.5
15	Radio and television repairman	7	3	-	-	-	-	-	-	-	10	3

No.	Trades and Occupations	Khrt	Blue Nile	Kordofan	Darfur	Kassala	North	Uppr Nile	Equat	BE Ghaz	Total No.	%	
	Building and Woodworking												
16	Bricklayer (construction)	13	3	2	-	37	-	-	-	8	63	3	
17	Painter (buildings)	3	3	-	-	9	-	-	-	4	19	3	
18	Plasterer	10	-	-	-	-	-	-	-	-	10	26	*
19	Cabinet maker (furniture carpenter)	47	-	20	2	1	4	6	-	4	87	11	
20	Carpenter (general)	28	15	-	-	38	-	6	-	7	94	4	
21	Wooden furniture finisher	6	-	-	-	-	-	-	-	-	6	2	
	Printing												
22	Printer (general)	42	7	-	1	1	2	-	2	-	55	4	
	TOTAL	573	217	49	33	169	9	19	13	36	1	118	

* Figure uncertain for Plasterer - most of whom work as contractors.

ANNEX XII

(Reference pard. 42)

NUMBER OF EMPLOYEES REQUIRING UPGRADING TRAINING BY OCCUPATION AND SKILL LEVEL/CATEGORY

A. Public Sector

Occpn code	Techn	Formn	Sk wkr	Ssk wkr	Total
101	2	18	221	320	561
102	8	40	842	792	1 682
103	2	15	169	507	693
104	12	34	1 071	924	2 041
105	4	15	402	180	601
106	1	4	96	34	135
107	10	30	225	513	778
108	2	3	12	16	33
109	-	2	33	48	83
110	-	9	99	83	191
111	17	41	448	602	1 108
212	4	7	110	104	225
213	66	71	395	889	1 421
214	-	21	321	324	666
215	74	4	16	5	99
316	38	29	265	367	699
317	-	4	65	115	184
318	-	-	1	15	16
319	1	14	88	178	281
320	11	24	259	599	893
321	-	-	54	115	169
422	3	31	78	94	206
TOTAL	255	416	5 270	6 824	12 765

B. Private Sector

Occpn code	Techn	Forun	Sk wkr	Ssk wkr	Total
101	-	19	96	299	414
102	-	1	18	20	39
103	-	1	2	8	11
104	1	4	60	34	99
105	-	5	11	58	74
106	-	1	8	3	12
107	-	-	1	8	9
108	-	-	-	15	15
109	-	-	11	29	40
110	-	3	23	32	58
111	-	20	76	278	374
212	2	1	8	12	23
213	-	-	3	3	6
214	-	-	9	11	20
215	3	-	3	4	10
316	-	8	3	5	16
317	-	1	1	3	5
318	-	2	-	-	2
319	-	6	41	95	142
320	-	9	37	64	110
321	-	-	1	13	14
422	1	8	161	272	442
TOTAL	7	89	573	1 266	1 935

ANNEX XIII

(Reference para. 42)

NUMBER OF EMPLOYEES REQUIRING UPGRADING TRAINING BY SIZE OF ESTABLISHMENT AND SKILL LEVEL/CATEGORY[1]

Size[2]	Techn	Formn	Sk wkr	Ssk wkr	Total
5-9	3	8	158	411	600
10-29	20	26	165	469	680
30-49	13	28	44	152	237
50-99	27	49	338	557	971
100-499	87	139	925	1 336	2 487
500+	112	235	4 213	5 165	9 725
TOTAL	262	505	5 843	8 090	14 700

[1] In twenty-two designated occupations; excludes 2,160 others recorded in survey.

[2] Number of employees on payroll.

ANNEX XIV

(Reference para. 46)

CURRENT VACANCIES BY OCCUPATION AND PROVINCE

No.	Occupation	Khrt	Blue Nile	Kord-ofan	Dar-fur	Kass-ala	North	Uppr Nile	Equat	BE Ghaz	Total
1	Blacksmith; hammersmith	80	19	6	9	15	-	18	6	12	165
2	Diesel engine mechanic (non-veh)	4	27	2	18	4	9	7	1	3	75
3	Earthmoving mach (incl tract) mech	-	13	-	-	-	-	1	2	-	16
4	Fitter and machinery mechanic	71	45	2	4	23	-	1	-	5	151
5	Machine tool operator-setter	24	16	4	1	2	4	-	-	4	55
6	Moulder and core-maker	1	2	3	-	-	-	-	-	-	6
7	Plumber and pipe fitter	12	53	4	4	1	-	2	-	3	79
8	Refrig and air cond instalr/mech	5	-	-	-	1	-	-	-	1	7
9	Sheet metal worker	19	3	-	-	1	-	-	-	9	32
0	Welder and flame cutter	15	10	2	2	4	2	-	3	4	42
1	Motor vehicle mechanic	110	25	1	16	8	-	1	-	13	184
2	Vehicle electrician	10	14	-	2	55	-	1	-	1	33
3	Electric lineman and cable jointer	19	49	1	20	3	16	1	2	13	124
4	Eleetrical wireman	23	15	-	4	4	-	2	5	-	53
5	Radio and television repairman	7	5	-	-	-	-	-	1	3	16
6	Bricklayer (construction)	6	21	7	-	4	-	53	4	22	117
7	Painter (buildings)	6	2	-	-	2	-	11	5	13	39
8	Plasterer	1	-	-	-	-	-	-	7	-	8
9	Cabinet maker (furniture carpenter)	24	-	16	-	-	-	11	-	-	51

Occupation	Khrt	Blue Nile	Kord-ofan	Dar-fur	Kass-ala	North	Uppr Nile	Equat	BE Ghaz	Total
Carpenter (general)	8	15	1	-	2	-	92	7	48	113
..ooden furniture finisher	1	6	-	-	-	-	1	2	-	1C
Printer (general)	133	5	1	-	-	3	-	2	-	144
Other trades	28	46	?	-	5	4	-	-	15	10C
TOTAL	607	391	52	80	84	38	152	47	169	1.6[illegible]

ANNEX XV

(Reference para. 46)

ESTIMATED FUTURE VACANCIES (UP TO FIVE YEARS) BY OCCUPATION AND PROVINCE

o.	Occupation	Khrt	Blue Nile	Kord-ofan	Dar-fur	Kass-ala	North	Uppr Nile	Equat	BE Ghaz	Total
1	Blacksmith; hammersmith	590	293	22	26	76	51	51	6	12	1 081
2	Diesel engine mechanic (non-veh)	91	87	-	6	1	12	-	16	6	219
3	Earthmoving mach (incl tract) mech	4	89	-	-	-	4	-	4	3	104
4	Fitter and machinery mechanic	196	71	4	4	3	10	3	6	5	302
5	Machine tool operator-setter	88	63	9	2	4	2	-	2	2	172
6	Moulder and core-maker	36	-	10	-	-	2	-	-	-	48
7	Plumber and pipe fitter	25	59	2	10	-	29	-	-	1	126
8	Refrig and air cond instalr/mech	17	-	-	-	8	-	-	-	3	28
9	Sheet metal worker	79	6	-	1	-	22	-	-	2	90
0	Welder and flame cutter	158	50	4	5	7	5	1	3	4	237
1	Motor vehicle mechanic	546	221	31	44	63	7	22	26	33	993
2	Vehicle electrician	137	45	1	5	15	1	5	3	2	214
3	Electric lineman and cable jointer	202	35	-	14	14	30	-	4	5	304
4	Electrical wireman	47	36	-	16	4	4	1	-	-	108
5	Radio and television repairman	83	27	-	-	2	-	-	8	-	120
6	Bricklayer (construction)	27	54	2	62	4	12	125	-	8	294
7	Painter (buildings)	13	23	-	20	2	14	23	1	2	98
8	Plasterer	5	1	-	14	-	-	-	-	-	20

o.	Occupation	Khrt	Blue Nile	Kord-ofan	Dar-fur	Kass-ala	North	Uppr Nile	Equat	BE Gbaz	Total
9	Cabinet maker (furniture carpenter)	180	1	47	4	10	13	32	-	10	297
0	Carpenter (general)	108	87	2	22	13	13	52	3	13	313
1	Wooden furniture finisher	27	-	1	1	-	22	2	1	10	44
2	Printer (general)	283	43	8	-	5	2	-	15	-	356
-	Other trades	292	155	-	1	7	29	-	30	22	476
	TOTAL	3 174	1 446	143	257	238	108	317	128	143	6 044

ANNEX XVI

(Reference para. 46)

SUMMARY OF PRESENT AND FUTURE VACANCIES BY PROVINCE

No.	Province	Vacancies		
		Present	Future	Total
1	Khartoum	607	3 174	3 781
2	Blue Nile	391	1 446	1 837
3	Kordofan	52	143	195
4	Darfur	80	257	337
5	Kassala	84	238	322
6	Northern	38	198	236
7	Upper Nile	152	317	469
8	Equatoria	47	128	175
9	Bahr El Ghazal	169	143	312
	TOTAL	1 620	6 044	7 664

ANNEX XVII

(Reference para. 47)

NUMBER OF ESTABLISHMENTS PROVIDING UPGRADING TRAINING SHOWING VARIOUS METHODS (OF SIX) USED

Province	Methods						TOTAL	
	1	2	3	4	5	6	Methods	Ests
Khartoum	45	23	13	1	20	5	107	61
Blue Nile	44	15	35	11	40	10	155	50
Kordofan	2	3	-	-	-	-	5	4
Darfur	1	2	-	-	-	-	3	3
Kassala	16	13	6	3	8	7	53	21
Northern	10	8	5	-	8	-	31	11
Upper Nile	1	-	4	-	3	-	8	5
Equatoria	3	2	8	-	3	1	17	9
Bahr El Ghazal	4	2	5	-	4	1	16	8
Totals	126	68	76	15	86	24	395	172[1]

Method key

1. Introducing its own training courses.
2. Developing courses with other agencies.
3. Developing courses with national vocational training scheme.
4. Supplying correspondence courses.
5. Sending employees for training to other countries.
6. Other methods.

---

[1] Number replying out of the 533 establishments surveyed.

ANNEX XVIII

(Reference para. 48)

GEOGRAPHICAL ORIGIN OF POSITIVE RESPONSES IN RESPECT OF INCENTIVE SCHEMES SHOWING NUMBERS AND TYPES OF INCENTIVES PREFERRED

Province	Type of incentive			
	1	2	3	4
Khartoum	195	173	149	42
Blue Nile	97	81	50	20
Kordofan	19	19	12	3
Darfur	16	17	16	1
Kassala	65	60	57	7
Northern	6	15	15	-
Upper Nile	11	13	12	-
Equatoria	16	16	10	3
Bahr El Ghazal	15	15	11	1
TOTAL	440	409	332	77

Note: The number of establishments responding was 440.

Incentive key

1. Improved rates of pay for course graduates.
2. Promotion to positions of greater responsibility.
3. Part-time release for training.
4. Incentives other than those (1 to 3) above.

ANNEX XIX

(Reference para. 48)

ORIGIN IN TERMS OF SIZES OF ESTABLISHMENTS RESPONDING POSITIVELY IN RESPECT OF INCENTIVE SCHEMES SHOWING NUMBERS EMPLOYED AND TYPES OF INCENTIVES PREFERRED

Size (No. of employees)	Type of incentive			
	1	2	3	4
5-9	158	140	93	11
10-29	100	79	55	14
30-49	22	21	19	4
50-99	62	62	54	25
100-499	60	62	62	12
500+	38	43	49	11
TOTAL	440	409	332	77

Note: The number of establishments responding was 440.

Incentive key

1. Improved rates of pay for course graduates.
2. Promotion to positions of greater responsibility.
3. Part-time release for training.
4. Incentives other than those (1 to 3) above.

ANNEX XX

(Reference para. 49)

ESTIMATED INTAKE OF NEW WORKER TRAINEES BY OCCUPATIONS AND PROVINCES

No.	Occupation	Khrt	Blue Nile	Kord-ofan	Dar-fur	Kass-ala	North	Uppr Nile	Equat	BE Ghaz	Total
1	Blacksmith; hammersmith	475	235	11	26	180	5	6	18	11	967
2	Diesel engine mechanic (non-veh)	20	48	-	-	28	9	6	17	-	128
3	Earth-moving mach (incl tract) mech	3	18	-	-	-	-	-	2	-	23
4	Fitter and machinery mechanic	91	12	-	1	20	-	-	-	-	124
5	Machine tool operator-setter	21	21	2	-	2	-	-	-	-	46
6	Moulder and core-maker	12	-	-	-	-	-	-	-	16	28
7	Plumber and pipe fitter	11	8	-	-	-	10	-	5	-	34
8	Refrig and air cond instalr/ mech	21	-	-	-	12	-	-	-	-	33
9	Sheet metal worker	37	-	-	-	1	-	-	-	-	38
10	Welder and flame cutter	24	2	-	-	-	-	-	4	4	32
11	Motor vehicle mechanic	168	43	27	11	124	-	4	12	5	394
12	Vehicle electrician	31	1	-	-	20	-	-	-	-	52
13	Electric lineman and cable jointer	517	9	-	-	54	-	2	2	4	588

No.	Occupation	Khrt	Blue Nile	Kord-ofan	Dar-fur	Kass-ala	North	Uppr Nile	Equat	BE Ghaz	Total
14	Electrical wireman	43	-	-	-	-	..	..	1	-	44
15	Radio and television repairman	26	6	..	-	-	-	-	..	-	32
16	Bricklayer (construction)	5	5	..	-	4	-	3	-	3	20
17	Painter (buildings)	6	5	-	..	-	..	..	..	-	11
18	Plasterer	-	..	-	-	-	-	-	-	-	-
19	Cabinet maker (furniture carpenter)	96	-	15	4	39	13	5	-	16	188
20	Carpenter (general)	47	54	15	-	8	-	-	-	-	124
21	Wooden furniture finisher	1	-	-	-	-	-	-	-	-	1
22	Printer (general)	234	47	2	3	20	7	-	13	-	326
	TOTAL	1 889	514	72	45	519	44	26	74	59	3 242

ANNEX XXI

(Reference para. 49)

NUMBER AND LOCATION OF ESTABLISHMENTS WHICH WOULD PROVIDE TRAINING (IN/OUT-PLANT, OR BOTH) FOR NEW EMPLOYEES, SHOWING TRADE GROUPS AND ESTIMATED INTAKES

Establishments and Responses

Province	In-plant	Out-plant	Both forms	Total	No reply	Ests svyd
Khartoum	117	32	56	205	2	207
Blue Nile	45	12	54	111	2	113
Kordofan	11	5	6	22	-	22
Darfur	6	3	9	18	-	18
Kassala	82	7	21	110	-	110
Northern	5	3	7	15	-	15
Upper Nile	1	6	7	14	-	14
Equatoria	1	3	10	14	2	16
Bahr El Ghazal	9	4	4	17	1	18
TOTAL	277	75	174	526	7	533

Establishments and Trade Groups

Province	Metal	Elec and Eltron	Bldg Cons	Prntg	Total	Estd intake
Khartoum	125	20	31	29	205	1 889
Blue Nile	83	11	14	3	111	514
Kordofan	11	1	8	2	222	72
Darfur	14	1	2	1	18	75
Kassala	68	12	26	4	110	519
Northern	8	2	3	2	15	44
Upper Nile	6	3	5	-	14	26
Equatoria	8	3	2	1	14	74
Bahr El Ghazal	8	2	7	-	17	59
TOTAL	331	55	98	42	526	3 242

ANNEX XXII

(Reference para. 52)

LIST OF HIGHER SECONDARY TECHNICAL SCHOOLS

No.	Location	Courses	Remarks
1	Atbara	ME	
2	Kareima	ME	
3	Geili	ME	temporarily at Wad Medani
4	Geneina	ME	
5	Wad Medani	ME	
6	El Obeid	CE	
7	Kosti	CE	
8	Nyala	CE	
9	Omdurman	CE	
10	Juba	*CE	temporarily at Omdurman
11	Port Sudan	CE + ME	

* plus leathercraft.

Courses

ME - Mechanical engineering - machining, fitting, turning, electrical work and automotive mechanics (petrol and diesel).

CE - Civil engineering - building trades including carpentry, masonry, bricklaying and plumbing.

ANNEX XXIII

(Reference para. 64)

THE UPGRADING VOCATIONAL TRAINING CENTRE, KHARTOUM

Background

1. The Upgrading Vocational Training Centre was established with international technical assistance provided through the ILO between 1957 and 1962, the work of the project being fully described in a report[1] published on its completion. Courses of varying duration in metalwork, auto-diesel maintenance and plumbing were initiated, to enable the attendance of workers over limited periods for instruction in specific skills employed in their occupations. Basic twelve-month courses were also provided for entrants to plumbing work.

Training Activities

2. Currently all trainees are enrolled from the public sector which provides the bulk of employment. As an example, the intake (within the planned total of 360 per year) to the series of upgrading courses commencing in July 1971 comprised employees of thirty different establishments in this sector - that is, government service departments or national boards and corporations.

3. The great demand for this training can be gauged from the fact that 1,810 workers applied for enrolment, out of which a total of 192 were accepted in the occupations recorded below:

- bench fitting;
- blacksmithing;
- gas + arc welding;
- general + auto electrical;
- machinist;
- sanitary appliances;
- sheet metal work;
- unspecified.

On investigation it was found that the majority of those recorded as unspecified were in fact motor vehicle mechanics. The ages of the trainees ranged from 19 to 40 years.

---

[1] Report ILO/TAP/Sudan/R.7, ILO, Geneva, 1962.

Problems

4. After a visit to the centre and discussions with the principal and staff in July 1971, an ILO expert assigned to the national vocational training scheme project reported as follows:

- drawing classes: cannot be conducted due to lack of drawing paper, pencils, erasers, and simple drawing instruments,
- gas welding: no gases had been available for the past four days - the contract for supplies had expired and had not been renewed to that date;
- arc welding: shortage of units limits the welding time of trainees to about one-and-a-half hours per day;
- machine shop: doubling-up of trainees on machines could not be explained, other than for simplicity's sake;
- fitting shop: supervision appeared to be very lax, with no attempt being made to indicate the faults of the trainees;
- mathematical ability: all instructors, but especially those from the mechanical and electrical sections, confirmed previous observations on the low standard of mathematical ability of the trainees - pointing to the need for corrective measures, possibly by imposing adequate tests before entry.

5. The expert further reported on air of frustration and lack of endeavour on the part of the staff, brought about by the aforesaid problems.

Comment

6. As regards building trades, however, an ILO report[1] published in 1967 on the development of vocational training in this field stated (paragraph 52), in connection with the irrelevance of much that is taught in some courses to the practical working requirements of the industry, that ... "it seems significant that the training given to plumbers in the Ministry of Labour upgrading courses produces consistently satisfactory results; in this instance there is close liaison between the training agency and the largest prospective employers - correspondingly close correlation between training standards and certification requirements".

---

[1] Report ILO/TAP/Sudan/R.11, ILO, Geneva, 1967.

ANNEX XXIV

(Reference para. 64)

THE APPRENTICESHIP VOCATIONAL TRAINING CENTRE, KHARTOUM

Background

1. This centre was established in Khartoum in 1963 in buildings which formerly housed a German trade exhibition. The West German Government still supply training materials and provide the services of a centre director and other expatriate technical staff who work with Sudanese counterpart personnel. The Department of Labour of the Sudan Government is fully responsible however for operations.

2. The centre prefers to enrol trainees who have received a satisfactory general education rather than a technical one, but all are required to take an entrance examination which includes a simple and easily arranged aptitude test.

Training Activities

3. The planned intake comprises 96 students a year who, after twelve months of basic general engineering craft training, receive a further period of two years of specialised training for one of the following occupations:

- bench fitting;
- machining;
- electrical;
- welding,
- plumbing;
- blacksmithing.

4. The training year extends over forty-four weeks, as contrasted with the much shorter Sudanese school year, and workshop exercises account for some 75 per cent of the total curriculum, giving the graduates possession of sound practical trade skills.

Comment

5. Despite the known objectives of the centre it has been necessary to emphasise from time to time the fact that its purpose is to prepare skilled workers for entry to industry, and not to offer an alternative route to higher technical education and "white collar" jobs. In 1964, separate two-year apprenticeship training courses for plumbers and bricklayers were provided at this centre in co-operation with UNICEF. The standard of instruction in both trades left much to be desired and it was decided to transfer the plumbing course to the longer training programme conducted under German auspices and to discontinue the course in bricklaying.

6. The mission discussed the cost of vocational training with the German director of the centre. After a study of operating costs over the seven years since inception, and spreading depreciation of equipment and plant over a period of twenty years, it was calculated that the training cost is £200 per trainee/year, or approximately £20 per working month. Approximately two-thirds of these costs continue to be borne by the West German Government.

7. The standard of training at this centre is equal to the best found in the Sudan and it reflects the efficiency and sense of vocation of the German staff and national counterparts. The three years duration of the courses, however, does not correspond with the apprenticeship training in other vocational training centres, which is of two years duration only, followed by one year of training in industry. Moreover, the length of the institutional training encourages the graduates to adopt the unrealistic attitude, referred to above, concerning their entry to higher education or "white collar" jobs.

ANNEX XXV

(Reference para. 64)

THE KOSTI VOCATIONAL TRAINING CENTRE

Background

1. The Kosti Vocational Training Centre in the Blue Nile province was opened by the Ministry of Labour in 1967. The main objective was to provide basic training for apprentices in diesel mechanics, and this remains the only main course, with auxiliary training provided in fitting and turning, welding, blacksmithing and in technical drawing and motor vehicle engines (petrol and diesel) maintenance.

2. Trainees all come from Kosti and its surrounding area; they do not receive any stipend, but are supplied with overalls. As many of the trainees come from very poor homes, the possibility of supplying them with a small stipend appeared to be desirable.

Training Activities

3. The centre is housed in old classrooms which are not at all satisfactory as workshops. The equipment is reasonably new but the layout is not good and more space is needed. The present capacity is only twenty-five trainees.

4. Because of a decrease in the number of trainees eventually graduating, the Government appointed an evaluation committee in July 1971 to report on the matter. It was found that one of the main problems affecting recruitment is that, as mentioned above, trainees do not receive any stipend.

Comment

5. The report of the evaluation committee included the following information on intake/output:

Year	Applicants	Accepted	Graduated	Employed
1967	40	25	16	16
1968	40	22	19	9
1969	30	21	19	-
1970	10	8	-	-

6. The committee recommended that:

- the centre should be located in its proper grounds on the area of 43,000 square metres with proper buildings and up-to-date equipment, to achieve its objectives in apprenticeship and in upgrading training;

- the centre produces diesel mechanics and in future should graduate agricultural machine mechanics;

- the centre should either be run properly or shut down.

ANNEX XXVI

(Reference para. 64)

THE MAY VOCATIONAL TRAINING INSTITUTE, WAU

Background

1. The institute was established in 1969 mainly through the enthusiasm and help of the local people who collected and donated the money required.

2. The aim of the institute was to provide basic training in several skills for people returning from the bush or for young men who had returned to their homes after having fled elsewhere during the long period of civil disorder which began in August 1955. The expert was in Wau when the troubles ceased on 6 March 1972. Following the restoration of order, it is known that many thousands of southerners will now return to their home areas; great problems of education, vocational training and rehabilitation are involved.

3. Until very recently the institute was under the combined control of the three ministries: Labour, Education and Southern Affairs. Responsibility has since been passed to the Labour Department of the Ministry of Public Service and Administrative Reform.

4. All trainees have been required to have completed their elementary education as a condition for entry; with the reopening of the long-closed secondary schools, it is intended to set the completion of the general (junior) secondary education as the prerequisite.

Training Activities

5. At the beginning of the session when the expert arrived, a total of 172 young men were enrolled in the following courses:

Auto mechanics (petrol only)	33
Bench fitting	50
Bricklaying	16
Carpentry	73
Total	172

Mainly because of the climatic conditions, an eight-month year is worked, the institute being closed during the hot season from June to late September. The auto mechanics course is of two years duration, with some practical industrial experience being obtained during vacations at the local workshops of the Mechanical Transport Department. Both the bricklaying course (which includes masonry) and the carpentry course, are of three years duration, while the bench fitting course is of one year only.

6. In the past, no electric power was available, but this is now being provided, and with it will come the possibility of introducing power tools for the first time.

7. During his visit to the institute, the expert was impressed by the clean, airy, naturally lighted workshops, two of which had been built by the trainees themselves; an additional one is almost completed. In 1972 trainees in the following trade skills are expected to graduate:

- bench fitting 50
- carpentry 70
- auto mechanics 53
- bricklaying/masonry 16

8. Instruction is given in both English and Arabic, and individual progress records are kept. It was pleasing to note the good standard of work attained by the use of hand tools only. In all the practical exercises being carried out, it was noticeable that the trainees were doing the work, not just watching a demonstration of it by their instructors.

Comment

9. It is doubtful if the national survey of industrial vocational training needs undertaken earlier with the assistance of the mission can accurately reflect the obvious upsurge which may be expected in the development of construction work and other activities to restore and improve the infrastructure of the province now that peace and security have been obtained.

10. The Ministry of Works in Wau employed 800 men, 250 of them skilled craftsmen, their work lying mainly in the field of building construction. There was a shortage of painters, plumbers and electricians, but a good supply of carpenters and masons. The director of the electricity and water authority workshop reported no development work on hand at that time, but he considered standards in the skilled trades were lower than the standards being prepared for the national vocational

training scheme. In Wau, craft training is mostly on the job by practice, and there is much need for upgrading training. At the large workshops of the Forestry Department their foremen and supervisors had been trained at the Senior Trades School in Khartoum, but the working carpenters had only been trained on the job and there was a need for upgrading of skills.

11. At the Mechanical Transport Department (MTD) workshop in Wau, the chief mechanical engineer stated that they had 560 cars and trucks to maintain and repair. About 60 motor vehicle mechanics and 5 auto electricians were employed. Staff vacancies are usually filled from the MTD school in Khartoum, but these replacements are not always available, and there was a need for four foremen and also technicians and welders.

12. With the restoration of peaceful conditions in and around Wau, the maintenance and development work of these major government departments must greatly increase resulting in a consequent demand for skilled workers and for upgrading of the skills of existing staff.

ANNEX XXVII

(Reference para. 64)

THE WAD MEDANI VOCATIONAL TRAINING CENTRE

Background

1. The Wad Medani Vocational Training Centre was established in 1970 as a pilot institution forming a component of the comprehensive five-year national vocational training scheme project (SUD 21) being assisted by UNDP through the ILO. The over-all organisation of the scheme - which also embraces the establishment and initial operation of a central government department of vocational training, and an apprentice training programme - is fully described in a technical report[1] published in January 1972.

2. This pilot centre was designed to serve as a model establishment in which the technical content of courses, as well as instructional methods could be developed for use in the centre and in other existing and future institutions to be established by the Government. The international team assigned to the project includes, besides the project manager (and experts in apprenticeship and in-plant training whose duties lie mainly outside the centre) six experts in the designated trade skill fields intended to be covered by the centre. The role of the experts is to advise and assist the national counterpart staff appointed to the centre, and thus enable them to continue operations after the experts have departed - three having done so already.

3. Most of the more important buildings had been completed and occupied when visited. Pending their construction, training had been conducted in temporary accommodation made available. Sections house facilities for training in heavy earth-moving equipment, diesel and automechanics (including autoelectrics), machine shop practice, fitting, welding and blacksmithing. Although shortage of funds precluded purchase of all the items required, most equipment had been received and installed at the time of the mission.

Training Activities

4. Courses of instruction are provided for the following categories:

---

[1] Sudan National Vocational Training Scheme - Technical Report No. 1, ILO, 1972.

- for apprentices admitted after eight years' general education in a two-year institutional course in one of the above-mentioned occupations, to be followed by a further year of in-plant training;

- for employed workers in a short course to upgrade their occupational skills;

- for foremen and supervisors a short course in shopfloor industrial topics;

- for instructors (serving or potential) to familiarise them with instructional methods.

The first course commenced in December 1969 with national counterpart instructor training to be followed six months later by a trade instructors' methods course for entrants from other institutions. The first apprentice training course was launched in October 1970. Further courses in the planned series followed, the total enrolment of trainees amounting to 281 up to the time the data was collected for the technical report published in January 1972.

5. Where it has been possible courses have been designed on the modular principle, to provide flexibility, the saving of instructors' time, and to permit adaptation of training material to the needs of the various groups, categories and occupations of trainees being instructed in the other vocational training institutions which the pilot centre is intended to serve.

6. Another feature of the centre is the advisory committee which first met in September 1970. It consists of representatives of the Gezira Board, Irrigation Ministry, Central Electricity and Water Authority, Sudan Tractors, Trade Unions and the Regional Labour Inspector. Committee meetings offer a valuable forum to discuss industry's training needs and the type, duration and content of courses in this centre, the work of which is crucial to the sound development of vocational training in the Sudan.

7. Since the project to establish the centre was formulated, the training of agricultural machinery mechanics has been accorded high priority. With the modernisation of industry, the repair of machine tools - and thus the need for training of millwrights - has also assumed importance. This has led, inter alia, to consideration of the extension of the project to introduce the necessary additional training in 1973.

ANNEX XXVIII

(Reference para. 65)

THE MECHANICAL TRANSPORT DEPARTMENT'S (MTD) SCHOOL, KHARTOUM

Background

1. The Government Mechanical Transport Department is a large employer with a total of 4,144 full-time paid workers, according to returns submitted in the 1971 skill survey. These are dispersed over 28 branches of the department located throughout the Sudan, being responsible for the operation and maintenance of approximately 15,000 government vehicles.

Training Activities

2. The main training activities of the MTD school are concentrated on conducting driver-maintenance courses of three months' duration, each with an intake of 100 trainees, providing a total output of 300 per year. The school also provides training for 35 trainees on a motor vehicle mechanics course with an intake every two years. The traditional apprenticeship of five years' duration is followed, with three-and-a-half years being spent in the school and the balance at the place of work.

Comment

3. Throughout the Sudan, the MTD had about 640 youths of 15 to 17 years employed without pay in the various depots as trainees, depending for their acquisition of skills on unorganised learning by observation and by helping craftsmen. Under a recent budgetary measure, practically all of them were assimilated into the paid workforce as assistants in various trade areas. Because of this, no vacancies for juniors are expected over the next five years.

4. Apprenticeship in the MTD was examined in 1969-70 by the specialist section of UNDP/ILO assisted national vocational training scheme project, in connection with preparation of legislation on this subject. Subsequently, the participation of the MTD in a pilot apprenticeship programme was secured with the entry of 40 apprentices in the 1969-70 financial year.

5. As regards apprenticeship and the MTD school, the project section, after further discussions, made recommendations among others in August 1970, to the following effect:

- the school to become a specialist institution catering only for the various automotive trades;
- practical training facilities for apprentices in the private sector to be provided by the MTD;
- instructors to be formally trained;
- adequate tools and equipment to be provided for each apprentice;
- in-plant training programmes (as designed by the project section) to be adopted,
- repairable vehicles from the adjacent MTD depot to be readily available to the school.

6. It was also noted that preference for entry to the school was accorded to employees' sons, but that there was a low standard of aptitude coupled with admission at ages above the normal. This pointed to the need for the raising of entry qualifications, so that better use could be made of the training opportunities available. In general, it was also considered that in view of the importance of this school, the need to reorganise the training warranted the assignment of an international expert in automechanics to assist in the task.

ANNEX XXIX

(Reference para. 65)

THE SUDAN RAILWAYS SCHOOL, GEBEIT

Background

1. This school is really an intermediate technical school owned by the railways, and was in fact the first technical school to be established in the Sudan seventy years ago. The railways authority is now considering handing over the school to the Ministry of Education. It has been used primarily as a pre-apprenticeship school for employees' sons, who had in many cases been unable to secure admission to a governmental school. It is residential and has an annual intake of 80 to 100 boys. After having been sited in Kassala in 1902, Khartoum in 1909, and Atbara and Omdurman in 1925, the school was moved to Gebeit in 1948.

Training Activities

2. The curriculum covers three years of 39 weeks each, the periods allotted to the subjects studied being as follows:

Subject	Periods 1st year	Periods 2nd year	Periods 3rd year
Arabic	4	4	4
English	6	6	9
Religion	2	2	2
Mathematics	6	6	6
Tech. drawing	6	6	9
Workshop practice	30	30	24
TOTAL of 35 min. periods per week	54	54	54

Comment

3. The lengthy combined period of training comprising three years of pre-apprenticeship plus five years of apprenticeship perpetuates an outmoded system which contrasts strongly with the modern concept of two years' basic training in a vocational training centre followed by a year of in-plant training under supervision.

4. There are disadvantages arising from the location of this residential school in such an isolated area as Gebeit; the students are separated from parental influences as well as from contact with any form of modern industry. A return to Atbara (the railway town) would do much to ease their problem of recruiting and keeping teaching staff; it would also make possible regular visits to the Atbara workshops, where full advantage could be taken of the excellent facilities for practical instruction and experience in railway work. These points were appreciated by the railways authority, the acting general manager having informed the expert that the decision to move the school from Gebeit to Atbara would probably be made soon. At that time (March 1972), however, he was awaiting the report and recommendations of the railway training specialist from ILO headquarters who had just carried out a survey of the training needs of the railway system in connection with a possible extension of the UNDP/ILO-assisted national industrial vocational training scheme project (SUD 21).

5. The training problem as a whole facing the Sudan railways is indicated by the national survey which indicated that no less than 3,240 employees required upgrading training. Against this was an outmoded system of apprenticeship, a shortage of modern and efficient training facilities, and the low educational standard of many recruits. It was understood, moreover, that future expansion of the system into the neighbouring countries of Ethiopia, Chad, Central African Republic and Uganda was contemplated, thus creating a need for more trained staff.

6. In discussing the problem the director of the Government's Manpower Department was understood to be firmly convinced that training throughout such a huge undertaking should be in the hands of one well-organised central department of the organisation, directed by a senior official - probably ranking as deputy general manager. Training matters should constitute a full-time job and not be one of several other responsibilities.

ANNEX XXX

(Reference para. 65)

THE TOZI FARM MACHINERY TRAINING CENTRE

Background

1. The Tozi Farm Machinery Training Centre in the Blue Nile province was established in 1960 for the purpose of training tractor drivers, mainly employed by the Ministry of Agriculture and other governmental authorities.

2. Trainees who are between the ages of 18 and 21 years must have completed the general (junior) secondary level of education, preference being given to those having some experience of farming or of machinery. Recruitment covers the whole of the Sudan.

3. No pay is given while under training, but trainees are provided with food and transportation. On graduating, they may qualify for the Tozi Farm Machinery Training Centre Certificate and the Industrial Standard Board of Trade Proficiency Certificate, and are free to accept employment in either the public or private sector.

Training Activities

4. At the time of the mission, the courses offered were of six months' duration, but because of the need to expand instruction to properly accommodate the technical content, it was hoped to extend this to twelve months. Courses comprise the following elements of training:

- Practical (70 per cent): driving, operating and maintenance (daily, weekly and monthly routines) of tractors, engines and agricultural implements such as wide-level discs, disc ploughs, ridgers, mowers, ditchers, harrows (various), and combine harvesters; workshop exercises, including tyre repairs, fuel system adjustments, electrical check-ups, battery and air-cleaner attention, oil and oil-filter changing and similar tasks.

- Theory (30 per cent): the theory related to tractors and implements, their driving and operating characteristics and maintenance.

The centre makes use of quite a large range of visual aids such as slide, cine and overhead projectors, models and charts, but there is need of more finance to provide other teaching materials.

5. In December 1971, 41 trainees graduated, and in February 1972 there was a new intake of 60 trainees. As regards the throughput of trainees under the arrangements envisaged for the new twelve-month courses a total graduation of 250 over the next three years is proposed.

Comment

6. Both the principal and the vice-principal instruct on the courses. They are assisted by three instructors who, although their technical knowledge and experience is sound, have not been adequately trained in instructional methods.

7. The centre proposes to extend its cultivated area and combine training with agricultural production. Also proposed is a plan to institute a two-year course for training motor mechanics (agricultural implements and engines). As it is foreseen that the Wad Medani vocational training centre is likely to embark on the training of agricultural machinery mechanics in the near future, this offers scope for fruitful co-operation between the two institutions, in order to avoid possible duplication of effort and waste of scarce resources.